

R-1 MULTI-TRACK RECORDER

Supplement to the R-1 Operation Manual

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Chapter 1: Introduction to Version 4

The Euphonix R-1 Multitrack Recorder offers the traditional feel of a reel-to-reel with all of the significant advantages of state-of-the-art digital technology: superior sound quality, greater efficiency, and expandability. The R-1 makes no compromises: it is the only digital multitrack designed solely for professional engineers and studios. It is a world apart from the software recorders and off-the-shelf devices designed for hobbyists.

As the direct replacement for any type of multitrack machine or mag dubber, the R-1 supports all typical sample and bit rates. The converters are transparent, which is one of the reasons the R-1 sounds better than the best two-inch tape and digital reel-to-reel machines.

This *Supplement to the R-1 Operation Manual* discusses all changes and new features offered by the R-1 Pilot hardware and software version 3 and 4. If a feature's description differs in the *R-1 Operation Manual* from this supplement, the supplement should be considered correct.

The following is included in the upgrade:

- **version 4 ghost-image CD:** Can be used to update or restore the entire R-1 pilot operating system and also upgrades the R-1 software to version 4.
- **version 4 R-1 application software installer:** Used to upgrade *only* the R-1 software to the most current version at the time of purchase. The installer allows including the newest software version without creating an entirely new ghost-image CD-ROM.
- **Upgraded and Refurbished Computer Pilot:** The upgrade from 2.0 to 4.0 includes replacing your R-1 Pilot Computer with a completely refurbished model including several new, higher-powered components. The local non-audio hard drive and RAM are larger (256 MB), and the CPU is much faster (933 MHz). This upgrade will improve the overall performance of your R-1, as well as maintain compatibility of the Pilot Computer with this and subsequent releases. Your old R-1 Pilot must be returned to Euphonix when your upgrade is installed. Euphonix technical support and field technicians will gladly help make this a smooth transition. All required software is pre-installed on new Pilot PCs.
- **New Remote buttons:** There are six new key caps for the remote to access new features.
- **Version 4 manual supplement:** This document you are reading describes all new version 4 features.
- **48-track wiring diagram:** Shows how to connect the components of a standard 48-track R-1 system.

The following features are new or have changed in version 4 (Version 3's new features are included in their respective chapters).

- Drag and drop editing of clip, clip-edge and cross-fades.
- Clip editing from the remote.
- Enhanced Library naming features, allowing for Title templates and reorganizing your audio libraries.
- Copy or move audio between Audio Decks through Firewire.
- Adjustable Track Sizes with scroll, allowing 2-48 tracks to be viewed in the track page. Several new hot keys permit quick zoom operations for tracks.
- AES-31 Batch Export/Import adds the ability to multi-select titles for AES-31 export and import. Allows a user to backup their R-1 titles and audio to any media that can connect to the Windows OS. Adds cross compatibility between recordings on R-1 and other systems that support the AES-31 title format.
- The Audio Browser and Titles Browser in the R-1 and Transfer Station are now where the Meters are located on an R-1. Tab between the Audio Browser and Titles Browser using the **Media/Browser** button in the left side of the Navigation Bar.

For more information visit www.euphonix.com for a detailed guided tour of R-1, or call you nearest Euphonix distributor.

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Chapter 2: Wiring Instructions

2.1 Firewire

1. Connect a firewire cable from the Pilot PC to the Studio Hub.
2. Connect a firewire cable from the Studio Hub to the Audio Deck 1.
3. Connect a firewire cable from the Audio Deck 1 to the Audio Deck 2.
4. Connect a firewire cable from the Audio Deck 2 to the Audio Deck 3.
5. Connect a firewire cable from the Audio Deck 3 to the Audio Deck 4.

NOTE: Do not connect the firewire cables in any other way than as described.

2.2 AES Clock

1. Connect an AES cable from the **AES Out** on the Studio Hub to the **AES In** on a converter.
2. Connect an AES cable from the **AES Through** on the converter to the **AES In** on the Audio Deck.
3. Repeat until all Converters and Decks have AES clock connected. If you prefer Word Clock, use the same procedure to the Word Clock connectors.

2.3 MADI

To use the MADI routes built into the Studio Hub you must connect the MADI devices in the following order:

1. AM 713 #1 MADI Output to Studio Hub MADI port Input 1
2. MA 703 #1 MADI Input to Studio Hub MADI port Output 1
3. AM 713 #2 MADI Output to Studio Hub MADI port Input 2
4. MA 703 #2 MADI Input to Studio Hub MADI port Output 2
5. AM 713 #3 MADI Output to Studio Hub MADI port Input 3
6. MA 703 #3 MADI Input to Studio Hub MADI port Output 3
7. AM 713 #4 MADI Output to Studio Hub MADI port Input 4
8. MA 703 #4 MADI Input to Studio Hub MADI port Output 4
9. Audio Deck #1 MADI Output to Studio Hub Input 7

10. Audio Deck #1 MADI Input to Studio Hub Output 7
11. Audio Deck #2 MADI Output to Studio Hub Input 8
12. Audio Deck #2 MADI Input to Studio Hub Output 8
13. Audio Deck #3 MADI Output to Studio Hub Input 9
14. Audio Deck #3 MADI Input to Studio Hub Output 9
15. Audio Deck #4 MADI Output to Studio Hub Input 10
16. Audio Deck #4 MADI Input to Studio Hub Output 10

2.4 Cybex Extender

Connect a fan-out cable from the cybex transmitter to different ports on the computer.

1. PS2 mouse cable connects to PS2 mouse port on computer (may require impedance box).
2. PS2 keyboard cable connects to PS2 keyboard port on computer (may require impedance box).
3. 9-pin mouse cable connects to remote port on computer.
4. Monitor cable connects to monitor port on computer.
5. CAT 5 network cable connects Cybex transmitter and receiver.

Connect a fan-out cable from the cybex receiver to different devices on the Remote.

1. PS2 mouse cable connects to PS2 mouse on Remote.
2. PS2 keyboard cable connects to PS2 keyboard on Remote.
3. 9-pin mouse cable connects to RS232-to-RS422 converter which connects to Remote.
4. Monitor cable connects to monitor on Remote.

Chapter 3: Display Features

This section introduces version 4's new display features:

- Waveform display
- Zoom controls
- **Reel Trim** and cursor-based Jog and Shuttle
- Clip-edge Locating
- **Bars, Beats, and Ticks** display mode

3.1 Waveform Display

The R-1 shows waveforms for all Clips in the track sheet unless you choose otherwise. All waveforms are drawn bipolar. The 3-D *tubular* Clips in previous versions have been abandoned in favor of simpler waveform displays. Waveforms allow you to more easily see gaps in the content, fully silent edit points, clipping or near clipping, downbeats, and similar material on separate tracks. Depending on your level of experience with using waveforms, you may even recognize certain instruments.



Figure 3-1 Dragging the clip edge handle of a waveform

It is also possible to display the Sound File name for each Clip. It may help to turn off the waveform display because names are easier to read against a plain block of color. Showing the name of the Sound File can assist import and export operations. However, if the file name display is too much information (i.e., it can obscure the waveform) it too can be turned off. The selected Clip and any Clip under the trackball cursor will still display its name.

To disable the waveform view and/or the file name view on any given Track:

1. Right-click on the Track Name.

The Track Edit popup menu appears.



Figure 3-2 Track Edit popup menu

2. Select **Display Waveforms** and/or **Display File Names**.

Each item's state toggles when selected.

3. To globally set the **Display Waveforms** and/or **Display File Names** for all tracks, press the **Wave + (Select Enable) Select All** keys.

All tracks are highlighted.

4. Right-click over any one of the selected tracks.

Enabling/disabling either display mode affects all tracks.

Zooming

The R-1 allows you to zoom in on the track sheet to display sample-accurate waveforms. At level 6 and below (zoom in for lower levels) there may be a pause while the waveforms calculate. This is due to the large amount of audio data being refreshed directly from the audio hard drives for each new view. The waveforms at these levels *do not refresh* while the Transport is active because it uses all of the system's resources. When Transport operations cease, the waveforms refresh.

Caching

At zoom levels higher than 6, the audio data is not drawn from the audio disks but is displayed using a cache of lower resolution data. This cache data is kept on the R-1 Pilot and *not* on the audio disks. Moving an audio disk to a new system (with a different Pilot) requires recalculating the waveforms. Initial calculation of the waveform data is done as soon as you press the **Stop** button after record.

Although it may take some time for the R-1 to process the audio to create the waveforms, it is done in the background while you continue to work. However, the waveform calculation does not progress while the Transport is active. The entire disk throughput is dedicated to play and record reliably—waveform calculation is only allowed to be active during Transport idle time. The R-1 also attempts to calculate waveforms where you are working first.

While the waveforms are still being calculated, a single zero level green line is shown inside the Clip. Clips (full-scale points in the waveform) are shown with a red highlight on the edge of the waveform.

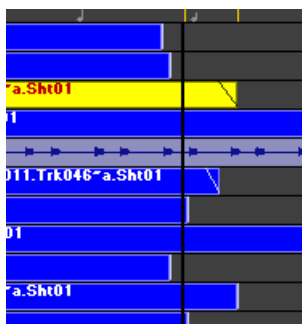


Figure 3-3 Fades Display

Fades are shown by a very light blue line which superimposes over the darker blue waveform or block (a selected Clip has these colors inverted). The figure above shows the block display mode on all Clips. The only Clip with waveforms visible is the Clip currently under the trackball cursor—this *pointed to* clip always shows waveforms and the sound file name.

3.2 Metering Features

Metering in the R-1 has been widely praised and includes a decaying peak hold, no peak hold, and no decay (manually reset-able) peak hold. R-1 metering now supports a user adjustable decay rate to get just the effect that the engineer needs to see.

The **Clear Meters** button between **shift** and **zoom** on the remote now resets the meter peaks and meter data.

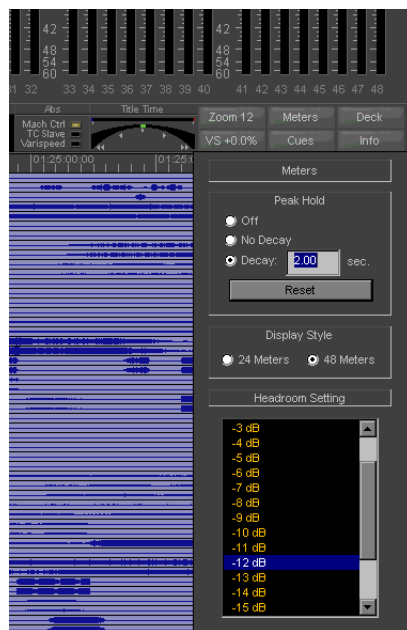


Figure 3-4 Adjustable Decay Rate for Metering

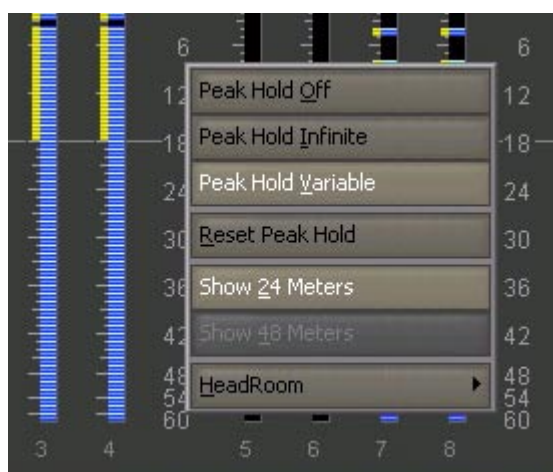


Figure 3-5 Right-click Metering popup menu

3.3 Zoom Features

3.3.1 Adjustable Track Views

You can adjust the number of tracks viewed to better edit the clips on the track. The Tracks page can show 2, 4, 6, 8, 12, 24, or 48 tracks at one time. This feature can be set by:

- left-clicking the **Deck** button in the Navigation bar;
- the **Deck** button above the tracks panel;
- the Zoom dialog;
- On the Remote, hold down the **Wave** key and press either the **Expand** or **Contract** keys.

Features exclusive to the Deck are available by right-clicking on the **Deck** button.

Several hot keys permit quick zoom operations:

- F7 = Zoom In
- F8 = Zoom Out
- F9 = Fewer Channels
- F10 = More Channels

3.3.2 Scroll Tracks

You can Scroll the tracks using the scroll bar on the right of the tracks panel to see adjacent tracks on the screen.

The **Reel Trim** button on the remote can now scroll tracks. Press and hold the **Wave** key and then press the **Reel Trim** keys on remote to scroll the tracks up and down. If you are in **Reel Trim** already, holding down the **Wave** key switches to Track Scroll and the **Reel Trim** button flashes. Release the **Wave** key to automatically return to Reel Trim. Press the **Reel Trim** button again to disable.

3.3.3 Zoom to Selection

Perhaps the most useful of the new Zoom features is Zoom to Selection, which quickly zooms to a selected section. Zoom to All shows the entire Title where clips are used.

Right-click on a selected or empty track region for the popup menu and choose **Zoom to All** or **Zoom to Selection**.

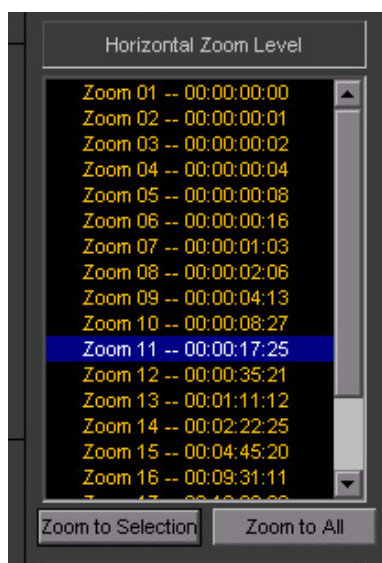


Figure 3-6 The Zoom to Selection and Zoom to All controls

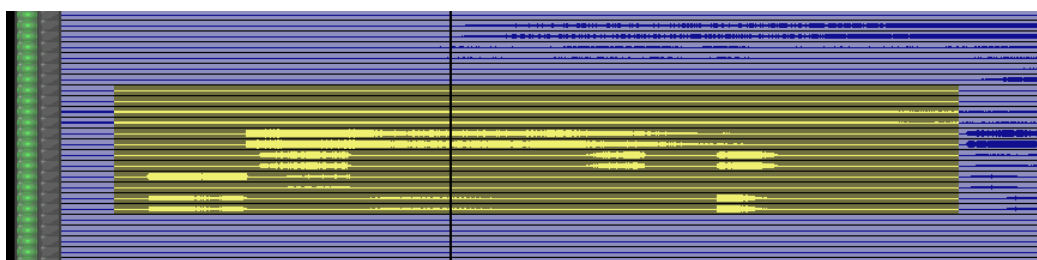


Figure 3-7 Zoom to Selection

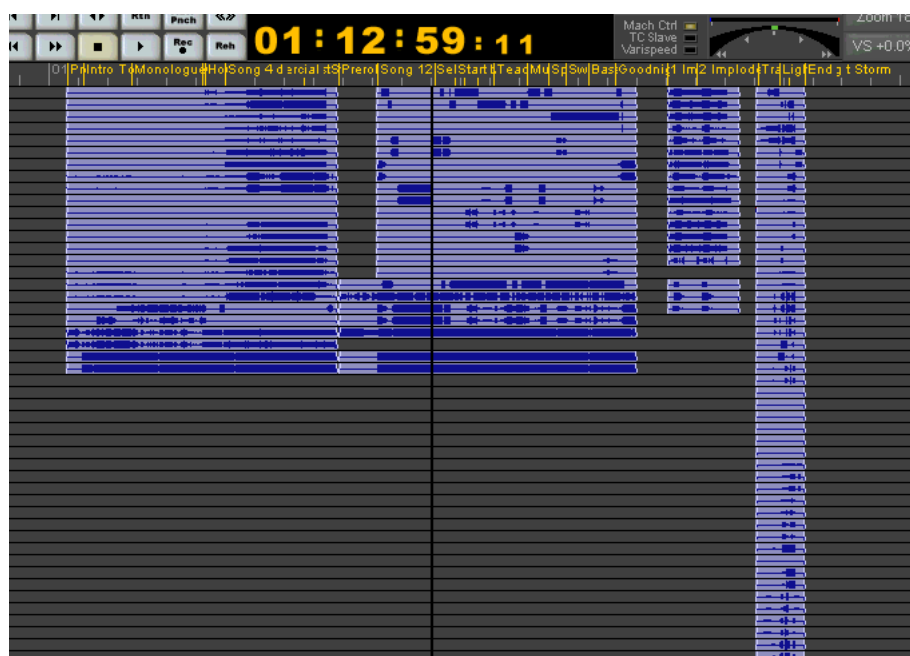


Figure 3-8 Zoom to All

3.4 Crossfades

The crossfade time is now always visible on the Navigation Bar of the on-screen display. Adjust the crossfade time as before or set it in the Record dialog.



Figure 3-9 Default Crossfade time for all new punches

3.5 Bars and Beats

The R-1's extensive Title Time display now includes **Bars, Beats, and Ticks**. When selected, the time locator accepts and displays time information in these more musically meaningful units. A tempo map editing page permits up to 16 tempo regions per Title. A click track can be created using one imported WAV file for the beat marks of the current tempo map and a second WAV file for the downbeat (see *Create a Click Track* on page 22).

Bars and Beats time display differs from other display modes because it depends on the tempo and time signature, both of which can change independently during a single title. The R-1 represents these changes as a tempo region; there can be 16 regions per Title.

3.5.1 Tempo and Time Signature

A *beat* is one unit of the bottom number of the time signature. For example, in 3/4 time, a beat is one quarter note. Tempo is represented as *beats per minute* (bpm); the allowable range is 1–960 bpm. The top number in the time signature indicates the number of beats per measure.

NOTE: We recommend programming the time and tempo changes into your R-1 Title before recording. Then use the click track feature to provide a reference for recording.



On the Remote



1. Press the **Time Display** button on the Remote.
2. Press the **Select** button to enter the **Format/Res** (time format and resolution) menu.
3. Use +/- to scroll to **Bars, Beats, Ticks**, then press **Select** again.

If selecting the **Bars, Beats, Ticks** display for the first time within this Title, you will see a the default tempo region: tempo = 120 bmp in 4/4 time counted from the zero position in Absolute Time. When entering a locate time in bars and beats, you must enter the bar and the beat to locate to. Entering just the bar will not work. For example, to locate to bar 54 beat 1, you must enter 5401. To locate to a bar 54 beat 1 tick 36 you would enter 5401.036

Now you must edit the Tempo Map to match the music you are about to record, which can be done only in the software.

4. Click at the top of the Current Time Display (on the time units) to toggle through the different format and display resolution options available.

Alternately, right-click at the top of the display and select **Bars, Beats, Ticks** (the last popup menu item).

5. Click on the **Map** button above the Current Time Display (when in **Bars, Beats, Ticks** mode).

The **Edit Tempo Map** window opens.

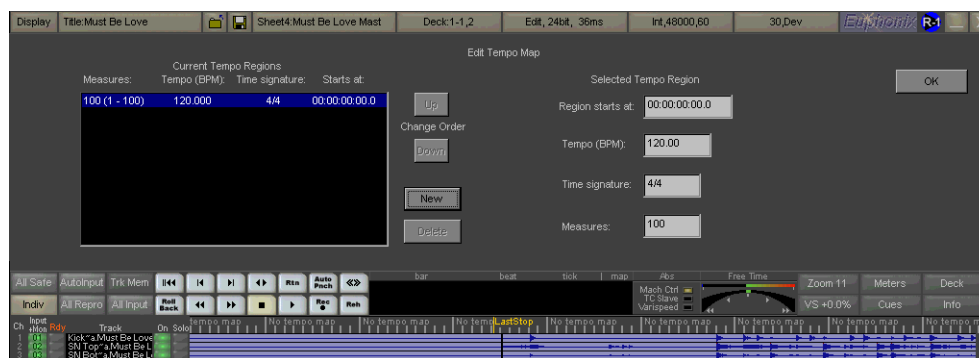


Figure 3-10 Edit Tempo Map Window

On the left side of this display the list of Tempo Regions is shown. Each region is defined by the:

- length of the region in musical measures;
- tempo in beats-per-minute (bpm);
- time signature for this region;
- starting time code for this region in case you need an absolute reference.

NOTE: *Titles created by version 2.0 software that enter **Bars and Beats** for the first time will not automatically create the first tempo region. Create the first or additional regions by clicking **New**.*

6. Click on any item in this list to highlight that Tempo Region.

Its parameters become editable in the four fields to the right, below **Selected Tempo Region**. The first field, **Region starts at**, is editable only for the first tempo region in the map. This start time for the first region is the offset for the entire Bars and Beats Tempo Map. Entering an inappropriate value causes the software to interpret it as time code = 0.

Newly entered values for these tempo region parameters appear in the tempo region list on the left when any one of three things occur:

- Place the cursor in a new field;
 - Select a different tempo region in the list on the left;
 - Press **Return** or **OK** to close the dialog.
7. Close the **Edit Tempo Map** window to re-arrange the track display to reflect the new time display mode.
 8. Enter a Tempo in the range 1–960 bpm.
 9. Enter a time signature.

The bottom number must be a power of 2 (i.e., 2, 4, 8, 16, 32, 64, etc.).

10. Enter the number of measures for this region.

The default number is 100.

11. After creating the first tempo region, press the **New** key.

This places a new region with default values at the end of the map. This new region is automatically highlighted to allow editing. Continue adding new regions until the Title is completely mapped.

3.5.2 Re-order Regions

Tempo region locations within the tempo map can be altered by using the **Up** and **Down** buttons. Delete unused tempo regions by clicking the **Delete** button.

3.5.3 Create a Click Track

A click track can be created using one imported WAV file for the downbeat of the measure and a second WAV file for the other beat marks of the current tempo map.

To create a click track:

1. Right-click on the track name on the track in which you want the click track to exist.
2. Choose **Make Click Track** from the popup menu.
The **Make Click Track** dialog appears.
3. Press the **Edit Tempo Map** button and adjust your tempo map settings for your song as described in *Tempo and Time Signature* on page 19.
4. When finished editing your tempo map in the Tempo Map dialog, press **OK** to display the **Make Click Track** dialog.
5. Click on the **Import new Measure File** button to select a sound to play on every downbeat.
6. Click on the **Import new Beat File** button to select a sound to play on every beat.
7. Click on **Paste Clicks** button to finish creating the click track.

Chapter 4: File Management

Although there are no changes to the disk drive format from version 3 to 4, there are new methods to create and access files:

- Launch a new Title from the Remote while entering the name of the new Title in the same operation.
- Import and Export AES31 titles and files.
- Export Sound Files from the R-1 audio disks to the R-1 Pilot operating system (or network) in Broadcast Wave format.
- Import broadcast wave files from the R-1 Pilot operating system (or network) on the R-1 audio disks as Sound Files.
- Copy files from the Directory into the Multitrack.

4.1 Changing the Title's Associated Library

You now have access to the Associated Library field of each title. The Associated Library is the name of the library that stores all new audio recorded in that title. The library is used to identify files associated with a title during the backup, restore, import, and export operations.

The Associated Library field has been added to the **New Title**, **Save Title As**, **Copy To**, and the new **Title Properties** dialogs.

The Associated Library can be changed at any point in the cycle of a title but it is important to note that it is not *retroactive* to existing audio, whether on disk or tape. If you change the library for new recordings, you may or may not want to change the library of existing recordings; this can be done as a separate operation.

To change existing recordings on disk, edit an existing library's name in the Audio Browser, or multi-select files in the Audio Browser and click the **Move To** button. This displays the **Move Files** dialog, which allows changing the library, disk, or deck of the files. See also *Synchronize Audio with Correct Drive* on page 54.

One use of the Associated Library feature is to create a Title Template that has all the track names customized to a general studio setup. To create a template:

1. Create and name a Title.
2. Adjust all the settings for the title (i.e., sample rate and track names).
3. Open the template Title and perform a **Save As** operation. In the **Save As** dialog, give the new Title its name and then put the new name into the Library field of the dialog.

Now you have a Title that belongs to a Library with the same name and the title already has all the tracks named for your session.

4.2 Launching New Titles

There are two *New Title* options in the Remote menu. Pressing **Title** then **New** on the Remote is identical to clicking the **Title** button in the Navigation Bar in software and selecting **New**. A dialog appears to provide a name or accept the automatically generated default name.

Save your current Title before launching a new one by pressing the **Title** button followed by **Save**.



On the Remote



then



To launch a new Title:

1. Press the **Title** button.
The **Title** button begins flashing.
2. Press the **New** button.
The **New Title** dialog appears on the monitor screen.
3. Use the keyboard to type in the **Title** name and press **Enter**.

4.2.1 The Significance of Good Naming Practices

We highly recommend naming your Title and Tracks because these names are used to create a Library for all recorded Clips and Tracks. Unlike software designed for static documents, the R-1 generates and names large numbers of files in response to punch and other record operations.

The Old Feature

If you are not concerned about long-term asset management and just want to launch a Title quickly with automatic naming:

1. Press the **Title** key.
It begins flashing.
2. Move forward in the Remote menu to the next option **New (from Remote)**,
3. Press the **Select** key.

This method essentially executes the same **New** command that the Remote provided in previous versions of the R-1.



As a shortcut to this old method of operation, select **Wave+New** (after pressing the **Title** key). Either method creates an automatically named Title. The R-1 Remote shows the name it selected for the new Title. Press **Select** to clear this display.

4.3 File Interchange

The R-1 can now capture sound files from either the R-1 Directory system or the displayed track sheet, and export them as Broadcast WAV (BWA) files. BWA files are extended versions of the WAV format. They are compatible with any software that reads WAV files (Windows and Macintosh platforms), even if that software does not use or preserve the additional data. BWA is the standard file format of the European Broadcast Union and of the committee developing the AES 31 file interchange standard.

The main advantage of the BWA format is the preservation of track and time information between a BWA-compatible editing system and the R-1. The R-1 can export the file to the editing software and then re-import the file to the precise time and track from which it was originally exported. The R-1 can also import standard WAV files.

The R-1 creates multichannel files from its linked channel recordings. Imported source files and exported target files can be located on the R-1's local drive, an optional random access SCSI drive attached to the R-1's pilot computer port, or a networked storage device attached to the R-1's built-in Ethernet port.

To facilitate the R-1's use as a 24-bit/96 kHz mastering recorder, version 4 allows direct transfer of multichannel BWA files to a DVD authoring system.

4.3.1 Title Sheet to EDL Conversion

The R-1 can convert any Sheet from a Title to an AES Edit Decision List (EDL), named with an .adl suffix, and R-1 audio clips to an AES 31 Broadcast Wave File (BWA), named with a .wav suffix. The process can also be reversed: AES 31 content can be converted back into an R-1 Title or Sheet for playback and editing on an R-1.

NOTE: *The R-1 Sheet, not the Title, gets converted to an AES 31 Title in the Export process.*

Before Exporting or Importing, set up the Default Folders Location used by the R-1 to place and access titles for import/export. These settings are found in the AES-31 import and export dialogs.

To export a single Sheet as an AES 31 EDL:

1. Right-click on the Sheet name in the Navigation Bar and select **Export to AES 31**.
The Export dialog appears.

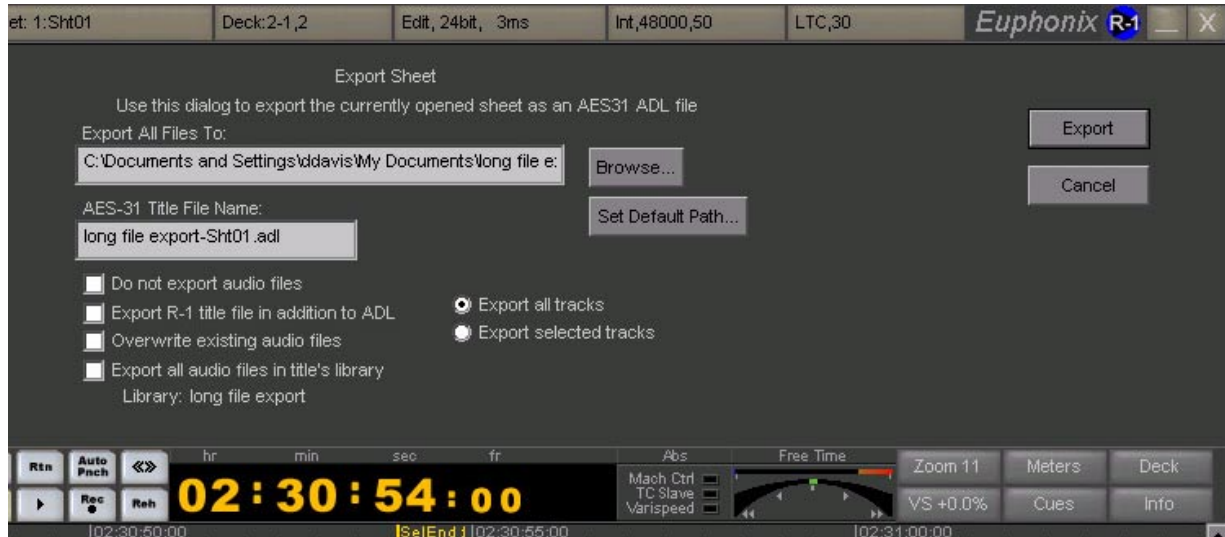


Figure 4-1 Export Sheet dialog

2. Select the desired Export options:
 - Export Title file only (when selected, the next two options are inactive)
 - Export R-1 Title (Puts a version of the R-1 title file with the ADL file and Audio files for later use on an R-1)
 - Overwrite existing audio files
 - Export all audio files in Titles library
 - Export all tracks (toggles with next option)
 - Export selected tracks (toggles with previous option)
 - Set export path (sets default export folder)
 - Browse (specify a folder other than default export folder)
 - File name (change exported file name)
3. Click **Export**.

Tips for Export Operation

When exporting titles with multiple sheets, all audio associated with the entire title can be exported with the first Sheet. This allows the R-1 to be left unattended while you do other tasks. When exporting the first title, select the **Export all audio files in Title's library** option.

When all audio has exported, export all other sheets belonging to that title. It is a good idea to leave the **Export all audio files in Title's library** option selected when exporting the other sheets, just in case material from one of the other sheets belongs to a different library. You should also make sure that each sheet is exported to the same Windows folder to avoid duplicate copies of the material. In this case, do not select the **Overwrite existing audio files** so each time you export a sheet belonging to the same Library, you would not export audio previously exported.

4.3.2 Importing an AES-31 Title

To Import an AES 31 Title into the R-1:

1. Left-click on the Track name in the Navigation Bar and select **Import AES 31**.
The Import dialog appears.

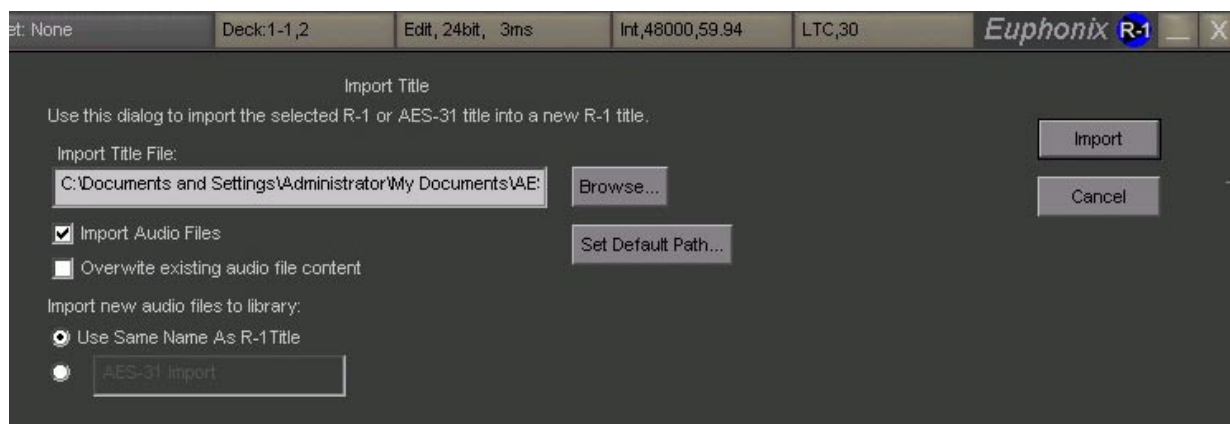


Figure 4-2 Import Title dialog

2. Configure the Import options:
Import Audio Files (Allows or disallows import of associated audio. If the audio does not exist on the target drives where you are importing your title, select this option.)
Overwrite existing audio file content (overwrites audio with same Global Unique ID (GUID) on the target disks)
Import new audio files to library

Use same name as R-1 Title (puts audio that does not exist on R-1 disks into same library as Title file)

Use another name (create a separate folder to store the audio)

Set Default path (sets default import folder)

Browse (specify a folder other than default import folder)

3. Click the **Browse** button to navigate to and select the .adl file to Import.

4. Click **Import**.

The AES file is imported with its audio to the R-1 format.

Audio in a Windows folder not associated with the adl file you are importing will not be imported to the R-1. When importing adl files to an R-1, the system will only import audio that is expected to be associated with the adl title. To import audio to the R-1 that is *not* associated with an adl or R-1 title, see *Importing WAV Files* on page 36.

Import AES Title as Sheet

Left-click on the Sheet in the Navigation Bar and select **Import AES Title**. Follow the same instructions as Import AES Title but a new Sheet is created within the current Title instead of a new Title. This feature could be used to put all takes of a particular song into the same R-1 Title, or merge all songs of an album into the same Title.

4.3.3 Settings Saved in the .adl File

The following R-1 Title settings are saved when exporting to the AES 31 .adl file: Track names, audio clips, audio file timecode and track positions, the disk the file originated from, sample rate, bit rate, default cross fade length, Sheet name, and exported audio file names.

4.3.4 Settings Saved in the Broadcast Wave File

The following settings are saved when exporting to the Broadcast Wave File: File name, timecode position, sample rate, bit rate.

4.3.5 Import R-1 Title

When Importing an R-1 Title, be careful that the Title is not already present in the R-1 or Transfer Station; this could overwrite the first Title. Each R-1 Title is identified within the R-1 and Transfer Station by a Globally Unique ID (GUID). The systems each track and manage the Title's versions as it is changed using the GUID. The system does not, however, discriminate between multiple copies of an R-1 Title made outside of the system. This requires great care as you manage Title files outside the R-1 or Transfer Station applications.

To import an R-1 title:

1. Left-click on the Track name in the Navigation Bar and select **Import AES 31**.
The Import dialog appears.
2. Click the **Browse** button.
3. In the lower portion of the Browse dialog you will see a drop-down menu named **Files of Type**. Open it and select **R-1 Titles (.ttl)**.
4. Navigate to and select the folder where the file to import resides.
5. Select your R-1 .ttl file.
6. Click **Import**.

4.3.6 AES-31 Batch Export/Import

You can now multi-select titles in the Title Browser to export and import AES-31 files.

Batch Export

To export an AES-31 file:

1. Display the **Title Browser**.
2. Select multiple titles to export and press the **Export** button.

The Batch export dialog appears.

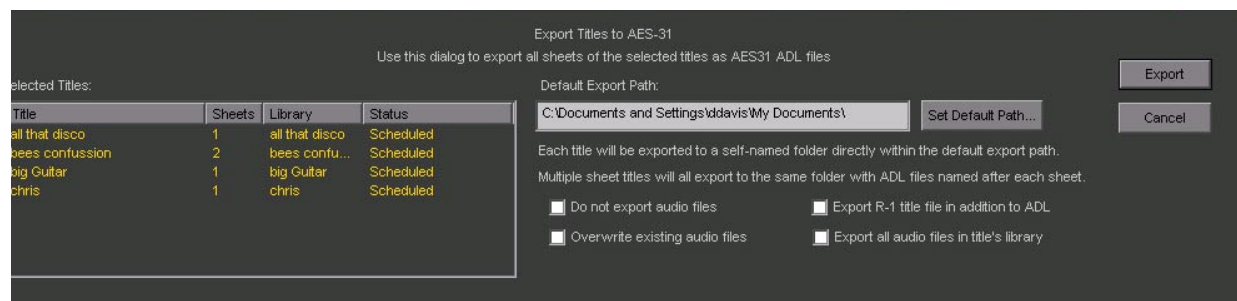


Figure 4-3 Export multiple Titles dialog

3. Configure the export properties.
4. Click the **Export** button.

If any of the selected files do not have valid export properties, a warning message box appears stating the name of the title incorrectly configured and the problem. If there are no problems, the **Export Title Files** dialog appears. The **Export Title Files** dialog contains criteria common to all title exports, such as how to handle problems and the number of titles exported.

5. Click **OK**.

A second dialog appears displaying the approximate export time. A bar shows the progress of the operation and the hourglass cursor appears. When complete, a message box announces success or failure. The **Export Title Files** dialog shows whether each title export succeeded or failed.

The Export properties in the **Export Title** dialog box are:

- Export R-1 Title - Puts a version of the R-1 title file with the ADL file and Audio files for later use on an R-1.
- Overwrite existing audio files
- Export all audio files in Title's library
- Set Default path - sets default export folder
- Do not export audio -exports the AES adl file and/or R-1 title file

Each title will be exported to a user-named folder directly within the default export path. Multiple sheet titles will be exported to the same folder with the ADL files named after each sheet. All the audio for each title and R-1 title will be placed in its respective folder.

Batch Import

To import an AES-31 file:

1. Display the **Title Browser**.
2. Click the **Import AES-31** button.

The **Import AES-31 Titles** dialog appears. This dialog consists of an empty list box for AES-31 files to import and the following buttons: Add Title, Remove Title, Edit Properties, Import All Titles, and Cancel.

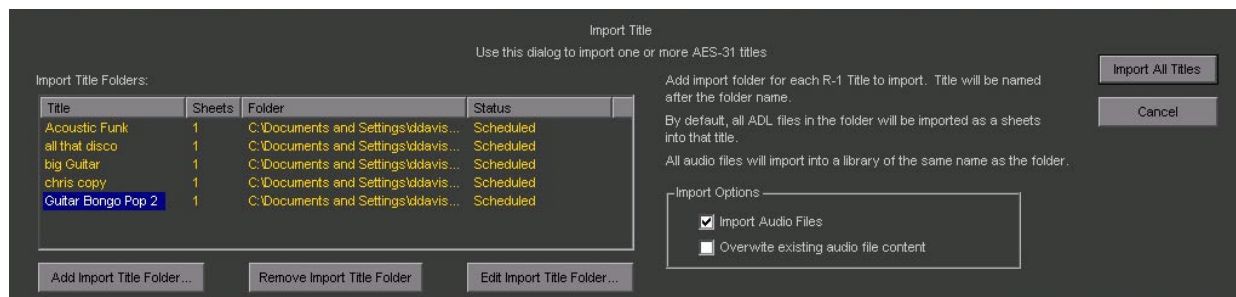


Figure 4-4 Import multiple AES-31 Titles dialog

3. Click **Add Title** for each AES-31 Title to add.

The Import Title Properties dialog appears, and a browser window pops up immediately on top of it. The Import Title Properties dialog now allows for multiple sheets.

4. Select the AES-31 ADL files and click **Open**.

The Import Title Properties dialog opens.

5. Set the import criteria for the title and click OK.

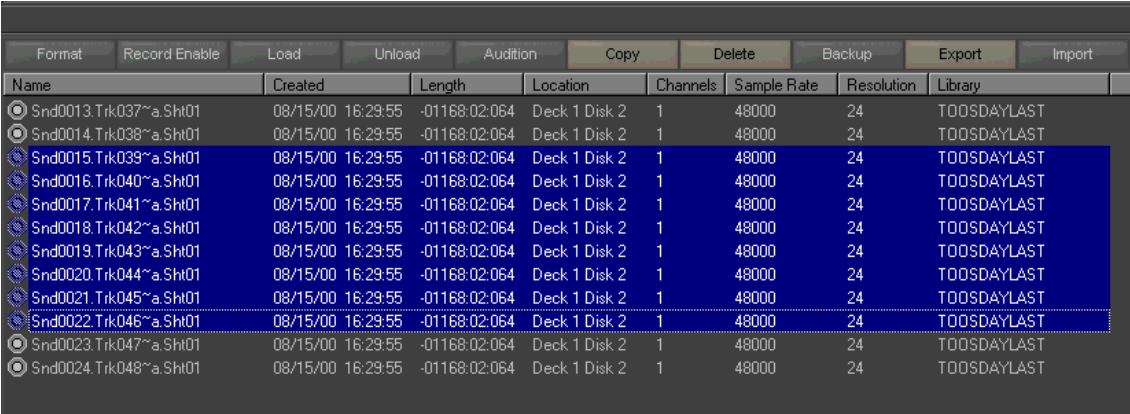
The title appears in the import list of the **Import AES-31 Titles** dialog.

6. Repeat steps 3–5 for each title to import.
7. The import criteria can be re-edited by clicking the **Edit Properties** button. This displays the **Import Title Properties** dialog without the browser.
8. Remove titles by clicking the **Remove Title** button.
9. Click **Import All Titles** to begin importing.

A bar shows progress and a message box indicates the success or failure of the operation.

4.3.7 Export from the Directory Software Panel

In the Audio Browser, select either **Media** or **Libraries**. Then select a Disk drive or Library in the Tree Panel to see its Sound File contents. Using the Media display mode allows retrieving sounds from a disk drive regardless of the associated Title, while the Library mode retrieves sounds from a particular Title regardless of its location. Note that after selecting a sound file, the Audio Browser **Copy To** button changes to **Export**.



Format	Record Enable	Load	Unload	Audition	Copy	Delete	Backup	Export	Import
Name	Created	Length	Location	Channels	Sample Rate	Resolution	Library		
Snd0013.Trk037~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0014.Trk038~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0015.Trk039~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0016.Trk040~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0017.Trk041~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0018.Trk042~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0019.Trk043~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0020.Trk044~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0021.Trk045~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0022.Trk046~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0023.Trk047~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		
Snd0024.Trk048~a.Sht01	08/15/00 16:29:55	-01168:02:064	Deck 1 Disk 2	1	48000	24	TOOSDAYLAST		

Figure 4-5 Multi-selecting Sound Files for Export

In the Audio Browser, multiple Sound Files can be included in the **Export** command:

1. Click on a Sound File.
2. Press the **Ctrl** key and click on additional Sound Files.

You can also select a range of adjacent Sound Files:

1. Click on the column heading at the top of the Sound Files list to sort the Sound Files by that criteria.

This allows grouping files of a certain length or containing the same base name.

2. Click on the first Sound File in the list that you want to include then press the **Shift** key and click on the last Sound File.

All files including and between the top and bottom file are selected.

3. Click the **Export** button to display the **Export to Wave** dialog (page 33).

4.3.8 Export from the Multitrack Panel

1. Right-click and hold down on the Clip to export.

This selects the Clip and opens the **Clips** popup menu.

NOTE: *Right-clicking on an already selected region (not a single Clip), pops up a generalized editing menu without export and import commands.*

2. Choose the **Export** command.

The **Export** dialog appears.

It is only possible to export one Clip at a time from the Multitrack.



Figure 4-6 Export command in the Clips popup menu

The Export to Wave Dialog

This dialog works as a batch handler if it has been launched from the Directory panel with multiple files selected. When launched from the Multitrack it will list, and therefore export, only one file at a time. The top of this display shows where the files will go. This is set to be C:\Euphonix\Sound Files by default but can be changed by re-entering another path. It is also possible to change the path by selecting a file and choosing to **Edit the Export File Name** (see below).

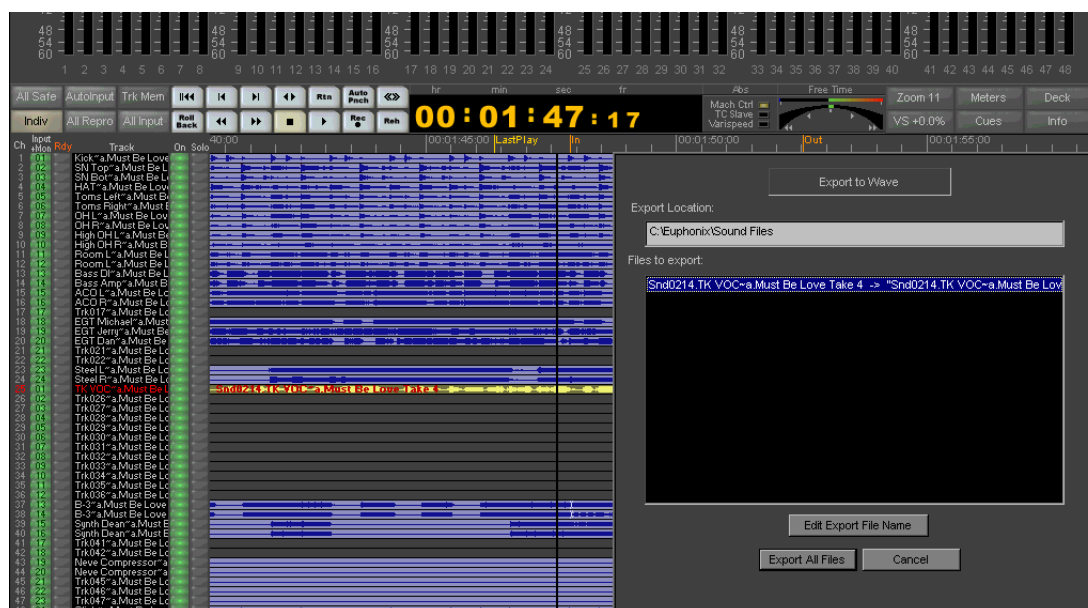


Figure 4-7 The Export to Wave Dialog launched from the Multitrack

Changing the path is generally not recommended. The default location allows operators and Euphonix R-1 product support technicians to locate exported files on any system. The R-1 will only be able to recognize exported and edited files if they are not moved around on the Pilot.

There are some exceptions to this rule, of course. Exporting to a network can be very useful. Consult your network administrator to create a network path for this setting. Although R-1 product support can help in this process, you must have knowledgeable staff available to support your network. The R-1 can also be configured to include a removable storage device on the Pilot's SCSI bus (68-pin connector is on the rear of the Pilot). Your in-house systems administrator must take responsibility for configuring any external device under Windows 2000. The new device will be located at either *drive D:* or *drive E:* (recommended). Files can be written to the drive's root directory or your system administrator can create a subdirectory for the exported files to reside.

NOTE: *The export path must already exist on the drive before it is entered into this field.*

You can also change the name of the file when it is exported. For example Snd0006.Trk41~a.Sht01 might be a birdcall sound used on an interactive computer media project where the R-1's autonaming is meaningless.

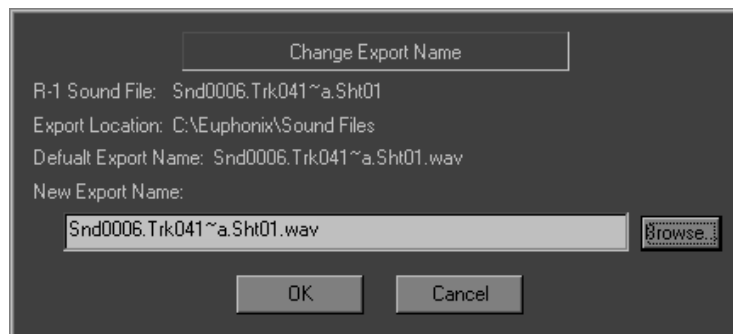


Figure 4-8 Change Export Name Dialog

1. Click on the desired Sound File in the list.
Once the file is highlighted, the **Edit Export File Name** button becomes active.
 2. Click **Edit Export File Name** to open the **Change Export Name** dialog.
The name and path of the sound file can be changed from this dialog.
 3. Press the **Browse** button to open the **Select New Export Directory** dialog.
 4. Navigate to the new Export path.
 5. Press the **Save** button to set this path for all exports until changed.
- Assign a new export file name or close the dialog (saving the selected path) and enter the new export file name in the previous dialog.

Exporting Multichannel Files

It is also possible to export multichannel recordings to a single file. To export a multichannel audio file, you must first link the R-1 channels onto which the audio will be originally recorded. There is no way to combine separate unlinked recordings into a single export file. When tracks are linked before making a new recording, the recording appears in the Audio Browser as a single file.

NOTE: *Although the R-1 does not actually interleave its recordings, it treats a collection of linked files as a single file for convenience. The R-1 automatically names the resulting Directory item according to the first name of the adjacent linked tracks.*

For example, if tracks 1–4 are linked, placing any of these tracks into record places them all in record. The punch in and out points for Clips on these tracks will also be locked together. Only one Directory item (Sound File name) will be created for all of these Clips. The automatically applied name would be Snd0001.Trk001~a.Sht01 (the first sound recorded on Track 1, Sheet 1) even though it really represents four sound files recorded on the first four tracks. See pages 156 and 204 in the *R-1 Operation Manual* for more information on linking.

Exporting a multichannel Directory item results in a multichannel Broadcast wave (BWAV) file. This single, exported file has interleaved channels according to the Microsoft WAV file specification. Several products use this format, most notably DVD-A authoring systems. Link your recording track when using the R-1 as a master recorder, then the tracks can be exported as a single BWAV file.

4.3.9 Importing WAV Files

The R-1 can also import files from the R-1 Pilot computer to the Multitrack's Track Sheet or to the Directory's Audio Browser. From the Multitrack a WAV file can be imported to the position (Time and Track) from which it was previously exported. From the Directory you can get the same effect by choosing to overwrite a Sound File that is already referenced by a Clip on a Track.

Unlike export, the import command can act upon multiple sound files from within the Multitrack panel. It is not necessary to select all the Clips that will be replaced because the track and time information has been stored in the BWAV file format. You may want to import only a single file at a time until you are familiar with this feature.

Remember that multichannel BWAV files can be imported via the Multitrack as well, but the target tracks must be linked. From the Directory you can import files into a placeholder Library called **Imported Sound Files** with the advantage that they do not overwrite other sound files. This approach is also helpful when new, un-positioned files are added to a Title.

4.3.10 Import to the Directory

Before importing files into the Directory, the R-1 must be set to the correct Disk. Navigate to Media, then to a specific Disk, which illuminates the **Import** button in the Audio Browser. Clicking on the **Import** button opens two dialogs simultaneously (Figure 4-9 and Figure 4-10). The **Add Wave Files to Import List** dialog selects files from the R-1's Windows or networked file systems. This dialog must be closed to access the **Import Wave Files** batch dialog behind it that names incoming file(s) and chooses whether to overwrite existing files that may have been used to create the original file. You can re-display the first dialog for selecting new files by clicking the **Add Files to Import List** button.

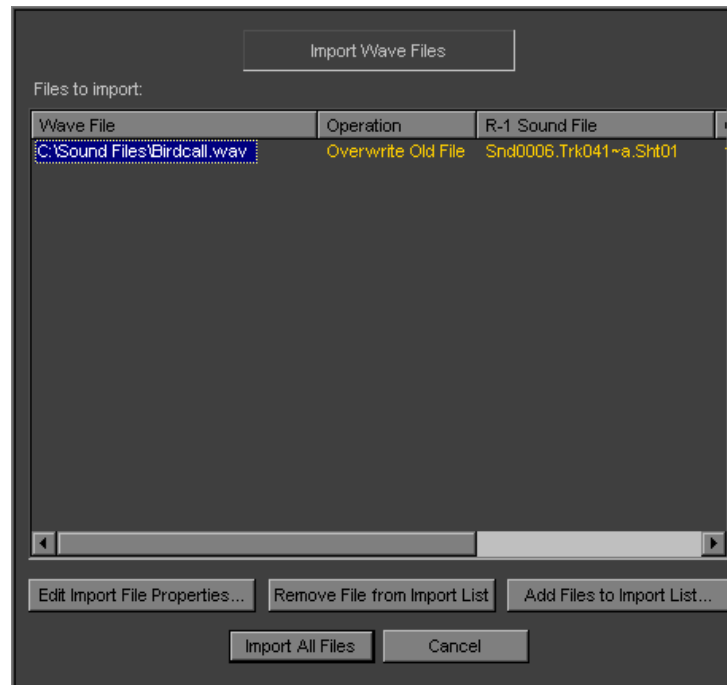


Figure 4-9 The Import Wave Files dialog

4.3.11 Import to the Multitrack

1. Right-click on any Sound Clip on the track where you want to use an imported sound and choose **Import**.

The **Import Wave Files** batch dialog appears. If the selected Clip has never been exported, the **Add Wave File to Import List** appears to allow selection of the WAV file to import. If the WAV file cannot be positively identified as originating with the sound file of the selected Clip, you can only import that file into the Directory as described above. If the selected Clip has been previously exported, the export name will automatically be listed in the **Import Wave Files** batch dialog.

2. To include other files in the Import batch command, press the **Add Files to Import List** button.

The **Add Wave File to Import List** dialog that appears is a typical Windows file dialog.

3. Select one item or several using the **Ctrl** or **Shift** keys.
4. Click the **Open** button to confirm the addition of these files to your list.

The dialog closes leaving the **Import Wave Files** batch dialog open.

Those sounds from previous exports are labeled *Overwrite Old File*; sounds not from previous exports will be labeled *Create New File*.

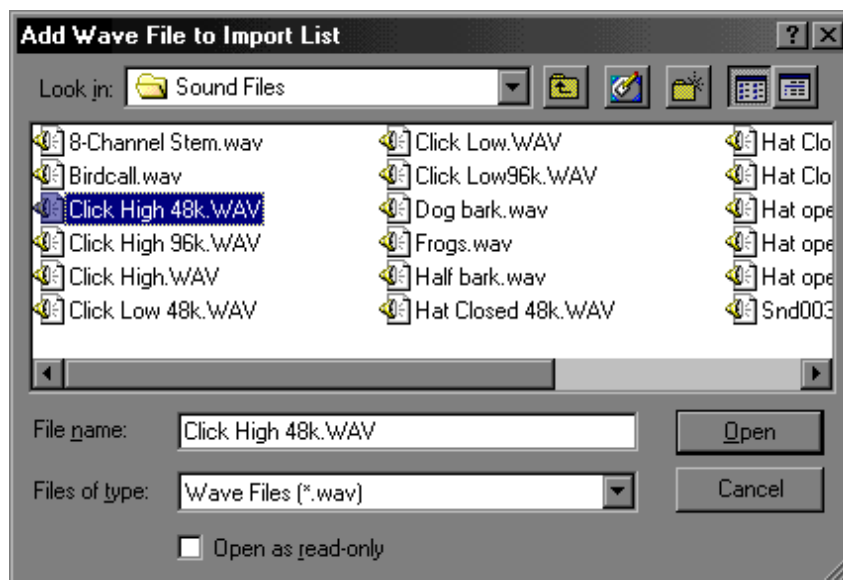


Figure 4-10 The Add Wave File to Import List dialog



Figure 4-11 The Import Wave Files dialog

To change the import operation for a given file, select it with the pointer and press the **Edit Import File Properties** button in the **Import Wave File** dialog.

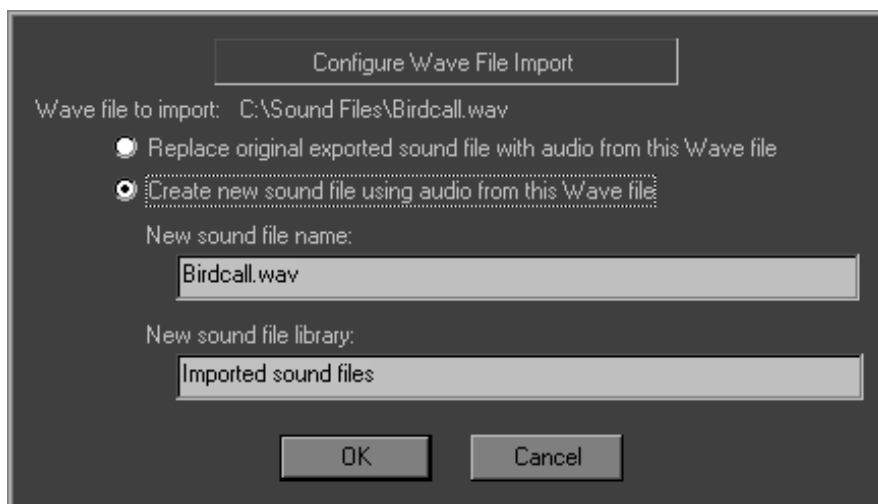


Figure 4-12 Replace or create a new Sound File

4.3.12 Using Imported Files or Files from Other Titles

Files that have been imported appear in the Directory where they can be selected and used in the current Title.

1. Select the Sound File in the list panel of the Audio Browser.
2. Click the **Copy** button above the Audio Browser.

This puts the Sound File(s) into a copy buffer where they can be pasted into the open Title.

3. Change back to the Multitrack software panel by clicking on or pressing the **Display** button.
4. Select the tracks to use and paste the files (see page 51).
5. Press the **Paste** key on the Remote.

Alternately, right-click on the selected Track name and choose **Paste** from the popup menu.

There is currently no difference between Paste and Paste Relative for dropping files from the Directory to a Multitrack Sheet.

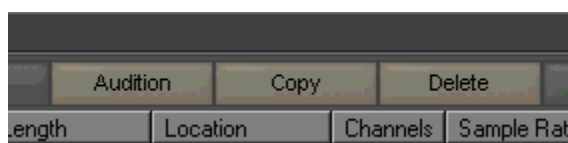


Figure 4-13 Selecting a Sound File illuminates the Copy button

If the imported or copied file is multichannel, link the same number of channels in the R-1 Multitrack panel before pasting. Selecting any one of the linked tracks selects the others. Pasting to those tracks provides the expected multichannel playback.

The paste operation uses the copied number of channels to paste to the selected destination. For example if you have eight channels copied (possibly under one eight-channel file name), but only four Tracks selected, the first four copied channels are pasted onto the four selected Tracks. Be careful to map copied channels to their proper destinations.

See page 203 of the *R-1 Operation Manual* for more information on linking.

4.3.13 Restoring a Title from Its Library of Sounds

When the **Copy from Directory then Paste on Multitrack** feature is applied to an entire Library of sounds, the original time stamps are used to automatically construct an equivalent Title.

This feature is most useful when if a Title was inadvertently deleted from the audio disk: the recordings remain on disk but their timing information is missing.

1. Create a New Title.
2. In the Directory, click on the **Libraries** button in the Audio Browser tree panel.
3. Click on the Library to place into the new Title.
The Library name will usually match the Title from which you are copying the audio.
4. Press the **Copy** button.
5. Switch back to the Multitrack panel, select all Tracks, right-click on the selected track names, and drag to the **Paste** command.

The position of the Now Line is not used for these pasting operations.

NOTE: *This procedure will not distinguish between sounds recorded to different Sheets. In an effort to emulate the original layering of the Sound Files on Tracks, the paste operation uses the order in which the sounds were created to layer the most recent sounds on top of earlier sounds. However, if the Title is comprised of multiple Sheets, all sounds will be layered into one edited Sheet, which may or may not be useful in your application.*

4.4 Miscellaneous

There is no longer a track or sheet limitation per title. We recommend keeping the number of sheets per title below 30 to avoid sluggish performance.

Right-click on the Deck button in the navigation bar to display a menu to unload, format, and backup/restore all disks and tapes or each disk and tape separately.

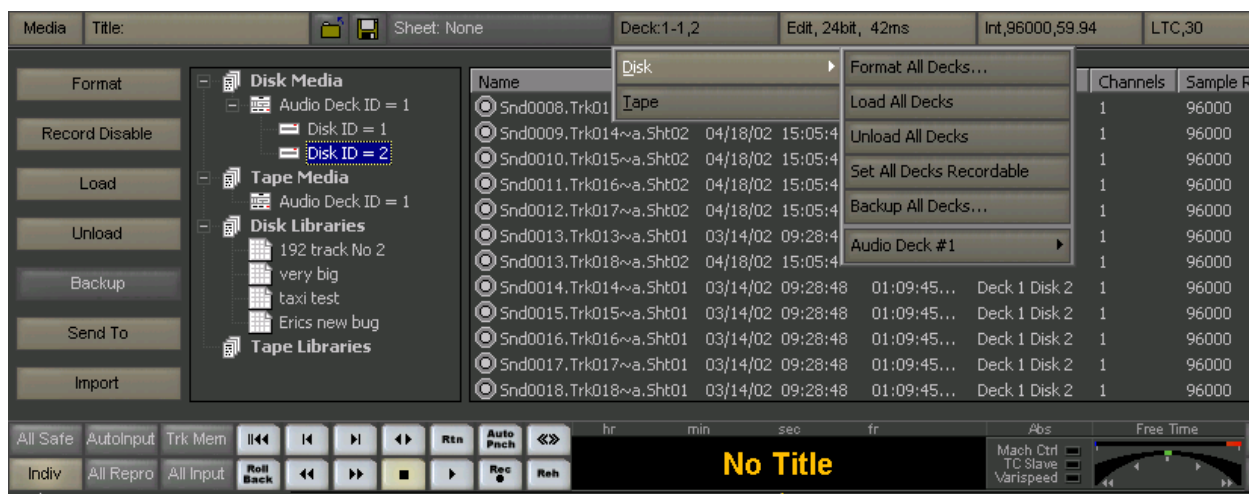


Figure 4-14 Media dialog

Chapter 5: Locator and Track Controls

This chapter discusses changes to the track and Locator functions. While the Locator changes are mostly small conveniences, the track control changes affect monitoring and are fundamental to the R-1 operation.

- All Repro and Auto Input are now mutually exclusive.
- The R-1 creates multichannel files when recording channels are linked. This feature is not new, but is now more significant in relation to file importing and exporting.
- The Reel Trim key on the Remote can locate within the Title.
- The Cue Track in the R-1 software Multitrack panel now accepts and responds to the trackball pointer.
- The **Next** and **Previous** Locator keys can be pressed together with the **Wave** key to locate Clip edges.

5.1 Track Controls

5.1.1 Avoid Disarming Tracks

In the Track Memory panel (activated by the **Trk Mem** button next to the transport controls), you can set **Recall never disarms Tracks** to protect against popping tracks out of record when performing a track status recall.

5.1.2 Monitoring

All Repro and Auto Input are now mutually exclusive. When All Input or All Repro is selected, Auto Input is ignored in monitoring but continues to be lit if enabled. If Auto Input is enabled while in All Repro or All Input, the action forces the track controls back to Individual. If the user disables Auto Input while in All Repro or All Input, there is no additional effect.

All Repro overrides the Input/Repro LEDs when stopped.

See page 194 of the *R-1 Operation Manual* for global Track Controls.

5.1.3 The Effect of Linking

After linking channels according to page 204 in the R-1 Operation Manual, Sound Files recorded to these Tracks are designated as multichannel. Multichannel Sound Files have only one entry in the Directory's Audio Browser: there appears to be one file even though the R-1 actually stores a single-channel file for the audio referenced by each Clip on each Track. The single-channel files are, in effect, hidden.

This is done because linked channels produce different legs of the same recording since the track record status, monitoring, and punch points are all linked and identical for these channels. When editing and importing multichannel sound, the open track sheet should be configured with channels linked accordingly. This will produce Sheets that play all desired audio from all channels.

A multichannel file can be pasted into a smaller number of channels. Select the number of channels to edit without linking them, then paste the multichannel file. Channels are pasted in the order they occur in the original file. For example, if the multichannel file has six tracks and the destination has three, the first three tracks from the multichannel file are pasted. Refer page 204 of the main *R-1 Operation Manual* for more information.

5.2 The Locator

5.2.1 The Cue Track

The Cue track now supports a right-click menu to adjust various Locator controls including **Go to Here** and **Loop to Here**. These controls may be easier and/or faster to access than those on the Remote.

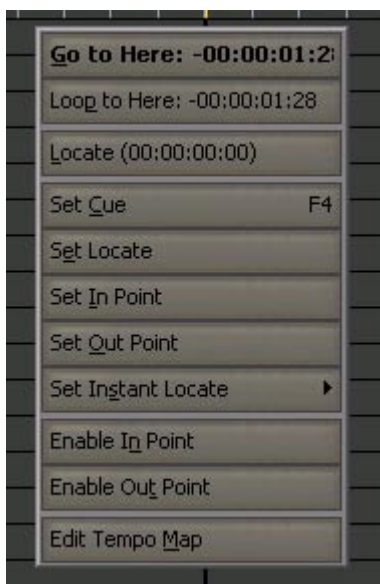


Figure 5-1 Cue Track right-click menu

5.2.2 Reel Trim

The Remote now supports **Reel Trim** and **Track Scroll** (next to the Shuttle button), allowing the SpinKnob to navigate inaudibly through material to look for gaps or downbeats. Using the Reel Trim simultaneously with the Remote's quick Zoom keys locates quickly and precisely.



On the Remote



then



5.2.3 Jog, Shuttle, and Reel Trim with the Pointer

On the Multitrack display panel, **Reel Trim**, **Jog**, and **Shuttle** are all supported under trackball control. The play head can be dragged (while in **Stop**, **Jog**, or **Shuttle** mode) by clicking on the Cue Track, holding down, then pulling the cursor toward the material to play. Press the **Ctrl** key to reverse the effect of pulling the cursor across the Cue Track. Toggling with the **Ctrl** key is a convenient method for rolling back and forth across a given area.



Accomplish Reel Trim by clicking and dragging on the Cue Track (while in Stop).



or click on



then



Alternately, use the pointer with Shuttle for audible dragging.



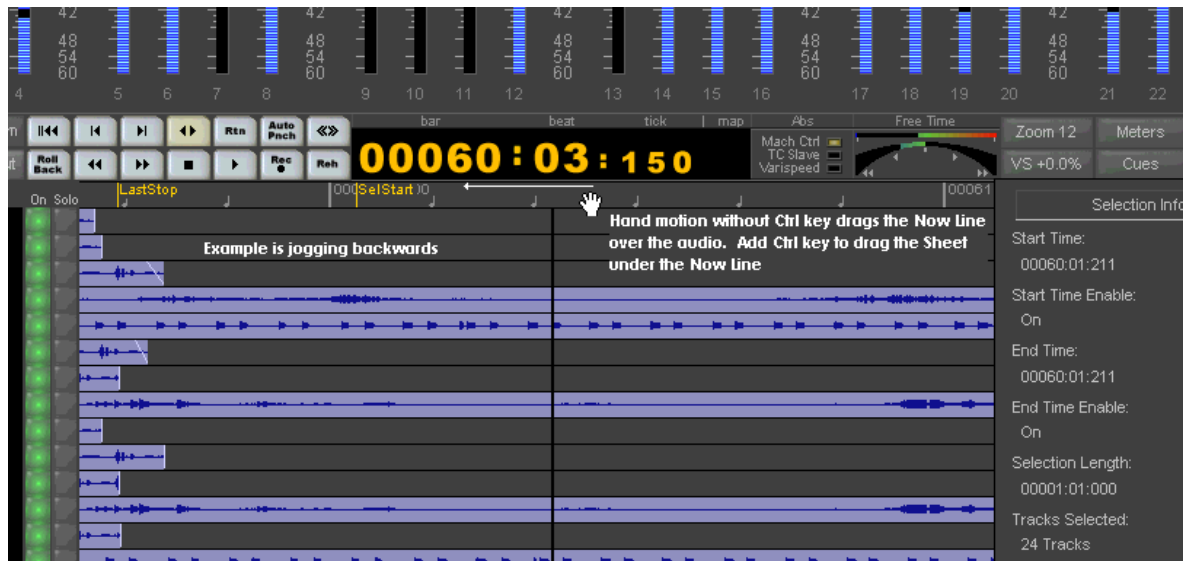
or click on



then



Alternately, use the pointer with Jog.



Pull the cursor left to play backwards.



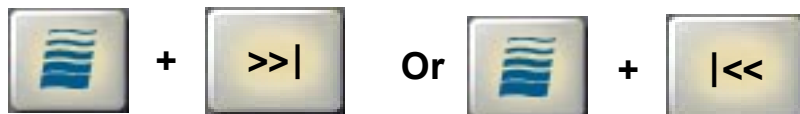
Hold down the **Ctrl** key to pull audio against Now Line.

5.2.4 Clip Edge Locating

Use the **Next** and **Previous** keys to jump sequentially from Cue to Cue. Press the **Wave** and **Next/Previous** keys simultaneously to locate to Clip edges. All Clips on all tracks are included according to their time.



On the Remote



With the Now Line positioned as shown above, the **Wave+Next** keys jump to the next Clip edge in the numbered sequence. Trailing Clip edges will also be detected in both directions.

Snap to edge of clip without the remote (works on TS also) by holding down **Alt** key and pressing either **Next Cue** or **Previous Cue** on the screen transport controls.

Chapter 6: Editing and Selection Features

Clip-based selection and editing along with the waveform display make the R-1's editing tools easier and more powerful to use. Waveform display makes locating edit points easier and faster. These enhancements allow a greater range of editing operations on the R-1 without transferring to a separate editor and can even fix problems that previously required punch recording.

This chapter discusses all changes and new functionality for selecting and editing Clips and time on the Track Sheet:

- Cue Track Editing
- Selecting Clips
- Wireframe Selection
- Right-click menus
- The **Information** drop-down panel in the Multitrack

Refer to page 260 of the *R-1 Operation Manual* for more information of the editing features of the R-1.

6.1 Editing Features

Version 4 allows greater editing interaction between the trackball and keyboard. The trackball cursor can now select Clips (punch segments) drag clips, fades and clip edges with a single click. It is now also possible to *wireframe select* using the trackball and to precisely adjust Clip, selection, or track parameters in a context-sensitive **Information** dialog. The time of the trackball's cursor is shown as a parameter to allow precise selection without changing the play location. Many edit operations are now accessed from drop-down menus, such as restoring the original recording parameters to previously edited Clips.

6.1.1 Edit a Single Clip with the Mouse

Edit a clip's position, fades, and head/tail position with the mouse.

1. Left-click on any clip to highlight it for editing.

You will see the Fade and Clip edge handles.

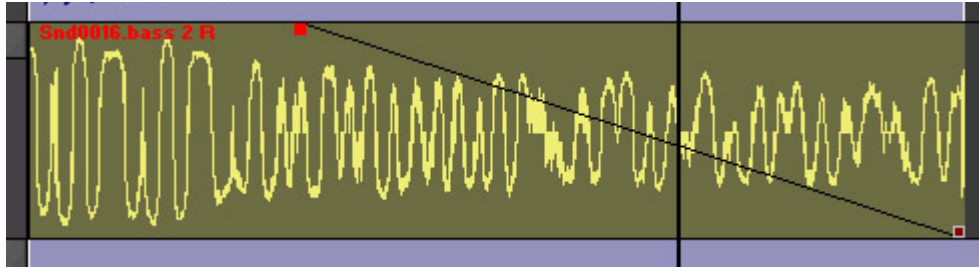


Figure 6-1 Dragging fade handle

2. Left-click, then hold and drag to move the clip.
3. Hold the keyboard's **Ctrl** key down to drag a copy of the clip.
4. Left-click hold then press and hold the keyboard's **Alt** key down to drag the clip to another track while maintaining the same time code position.
5. When you drop one clip onto another, the global crossfade value is applied to the clip that you are dropping onto, not the clip you moved.
6. Grab a fade handle at the top of a clip and drag it to the desired position. The Fade handle is active when it turns bright solid red.
7. Grab a Clip edge handle and drag it to the desired position. The Clip edge handle is active when it turns bright solid red.

The exact value of the fade (ms) is shown in real time in the **Clip Info** dialog box.

To adjust the cross fades between clips, first adjust the fade out of the left clip and then the fade in of the right clip. This provides optimal crossfade combinations. Because cross fades can be set to 500 ms and clips can overlap such that two clips are mixed, it is possible to cause a file's playback to fail due to exceeding the track playback count. If you experience this behavior as indicated by clip playback failure on the Audio Decks last few tracks, readjust your clip fades or bounce your edit to a new file.

6.1.2 Paste Relative

A pasted Clip can maintain the same offset to the Play head as when the Clip was copied. This allows spotting a sync point during the copy operation and using it to locate the paste point with a minimum of keystrokes. Sheet-to-Sheet track copies are also automatically synchronized using this feature without relocating the play head.

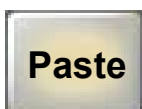
Press **Wave+Paste** on the Remote, or right-click on any Track and choose **Paste Relative** from the popup menu.



On the Remote



+



In the Software



Figure 6-2 Paste Relative in the Track Edit and Selection popup menus

6.1.3 Place Clips from the Directory

Audio clips from other Titles or imported from another file format can now be placed in tracks of the current Title.

1. Select the Sound File(s) in the Directory's Audio Browser list panel.
2. Press the **Copy** button.
3. Press the **Display** button to switch back to the Multitrack panel.
4. Select the Tracks where the audio clips will go.

5. Position the Now Line at the time where you want to paste the Clip.
6. Choose the **Paste** command from either the Remote or the Track Edit popup menu (right-click on the selected Track).

If more than one Track is selected as the destination for the paste operation, the number of files copied from the Audio Browser is relevant. Multi-copied files and multichannel files from the Directory paste as many of their channels as will fit in the selected tracks.

6.1.4 Cue Track Editing

The R-1 has always supported cut, clear, copy, paste, and slip editing with the option to adjust or maintain the time stamps of audio clips downstream from the editing location. Version 4 allows selection and editing of the Cue Track (list of Cues) from the GUI or Remote. Editing the Cue Track during other Rippled edits keeps the Cues synchronized with any slipped material.



Figure 6-3 Ripple with Cues selected in the Track Edit popup menu

Right-click on any track to open the Track Edit popup and select **Ripple with Cues**. The Cue list will now be edited when time is inserted or deleted from the Track Sheet. The Cue list is extended by inserting blank time, but contracted by deleting time. Cues located within the deleted time are removed from the list.

6.2 Selection Features

6.2.1 Select Clip with Select Clip Button

Select a clip underneath the Now Line on a selected track and edit it using the remote's Clip menu or the mouse.

1. Select the track on which to select a clip using the **Select** buttons on the remote.
2. Position the Now Line above the clip to select.
3. Press the **Select Clip** button.

The clip is highlighted and active for editing.

6.2.2 Slip Clip Using Trim Buttons and Jog Wheel on Remote

A new Clip menu has been added to the remote activated by a new **Clip** button to the right of the **Track** button.

Select a clip and then press the **Clip** button. The first level of the menu has the following options: **Slip Position**, **Slip Head Trim**, **Slip Tail Trim**, **Slip Audio Sync**, **Adjust Fade In**, **Adjust Fade Out**, **Cut**, **Copy**, and **Split**. When one of these options is selected, the trim buttons allow time mode dependant adjustment. The scrub wheel does a zoom-level dependant adjustment of the parameter. The clip is adjusted as indicated unless it reaches a max/min limit.

NOTE: *If a clip is not selected, the menu options would be **Select Inc Clips** and **Select Adj Clips**. The former selects all clips completely included in the selection region. The latter selects all clips that are at least partially contained in the selection region.*

The edits are immediate so the menu need not be closed to see the changes. Moving a clip trims adjacent clips as required. The changes are not final until exiting the menu. If the menu is canceled, the sheet reverts to its pre-menu state, even if edits were done with the trackball while the menu was open. Even after closing the menu, an **Undo** operation can revert to the previous state.

One notable change in this feature set is Slip Position, which can be used in combination with Reel Trim to easily slip audio into sync using the waveforms as your guide. For example, when aligning a loose bass line with a kick drum. Select the bass sound, turn on Reel Trim and reel rock so the Now Line is at the beginning edge of the bass line's waveform attack. Select **Slip Position** from the Remote's Clip menu, then press the **Select** button next to the Locate time window. This sets the marker for the clip you wish to slip. Now reel rock so the now line is at the beginning of the waveform attack of the kick drum. Press the **Select** button next to the Locate time window. The bass line will slip into its new position.

Slip Audio Sync is a new feature in version 4. Once a clip is selected for editing, using Slip Audio Sync keeps the start and end times of the clip the same, but the region of audio occupying that space can be slipped in time. This allows you to keep your crossfades and start/end times for a clip constant while adjusting what audio plays in that region.

6.2.3 Synchronize Audio with Correct Drive

Two new menu items have been added to the tracks right-click menu. Single and multiple track selection are available.

Copy Missing Audio – Displays a confirmation message box. When confirmed, the track(s) are scanned for clips that reference files on a drive that cannot be played by the track. A copy of the files with a new GUID is created on the correct drive for the track. The clips on the track are corrected to point to the newly copied file. A progress bar displays the time until completion.

The file name of the copied file is prefixed by *Copy of*. While the audio is identical to the first clip, it is considered a unique clip, and is not recognized by the system as being related to the original.

Move Missing Audio – Displays a confirmation message box. When confirmed, the track(s) are scanned for clips that reference files on a drive that cannot be played by the track. The audio files in question would be moved to the correct drive for the track. A progress bar displays the time until completion.

The moved file is the only copy of the audio in the system. If the file is referenced on tracks that played from the previous drive for the file, those clips will be *grayed out* to indicate missing audio.

You can also move existing recordings on disk from the Audio Browser by multi-selecting files and clicking the new **Move To** button. The **Move Files** dialog appears which allows changing the library, disk or deck of the files. Also see *Changing the Title's Associated Library* on page 23.

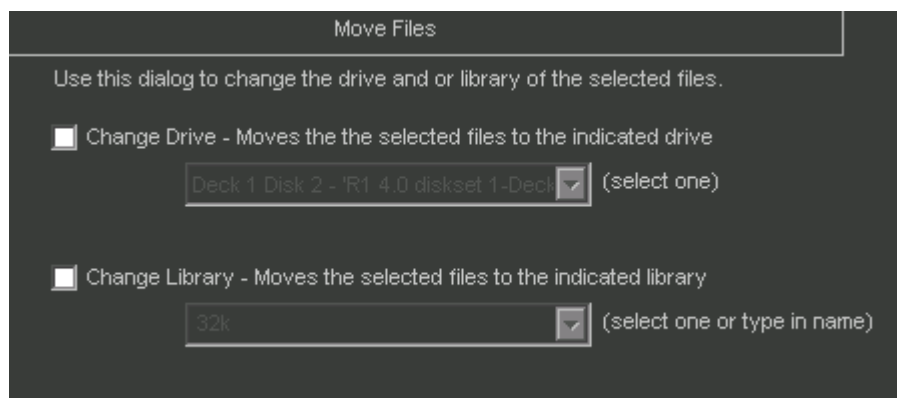


Figure 6-4 Move Files dialog

6.2.4 Selecting Clips

A Clip is formed each time you punch in and out on a Track. A Clip is a reference to the underlying audio recorded and stored as a Sound File in the R-1 Directory system. Editing in the Multitrack panel changes the Clips but not the Sound Files they reference. The list of Clips on a Track, often described as an *Edit Decision List* (EDL) is small and manageable (by comparison to actual audio files) so multiple versions of the EDLs can be managed by Undo and Redo commands.

In previous versions, working on an EDL required selecting a region of time, then executing the edit operation. This was sometimes called Mark-In/Mark-Out editing because the selection region is constrained by the time of its start and end points. The start and end points for the selection area do not have to correspond to the arrangement of Clips already on the Track. If the selection starts in the middle of a Clip then only the later half of the Clip will be affected by the edit. Conversely, if the end point lands in the middle of a Clip then only the first part of that Clip will be edited.

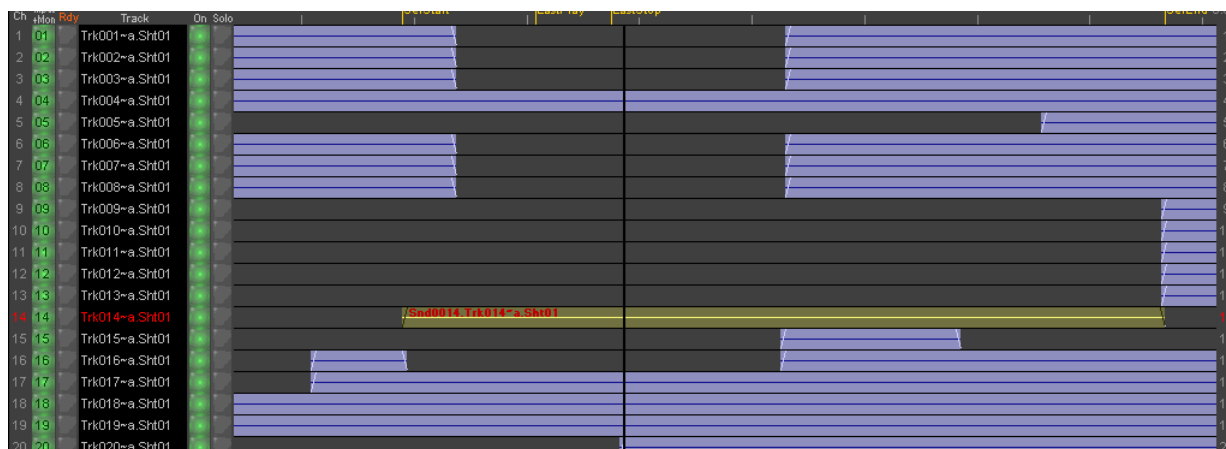


Figure 6-5 Select a complete Clip by clicking on its waveform/block

Store Start/Store End selecting is flexible and provides ample control over where an edit will start and end but can be clumsy when selecting an entire punch without including time on either side. Clip-based selection is more appropriate for these types of operations. Select a Clip by pointing to it with the trackball cursor and clicking.

NOTE: *The Clip head and tail define the Selection Start and End points. These region selection controls continue to work just as they did before. Clicking on a Clip automatically turns the global **Selection Control** On. Adding another Track to the selection area using the **Ctrl** key simply activates that Track and applies the Start and End Selection constraints to that Track. You cannot multi-select Clips of differing time durations or positions on various Tracks.*

6.2.5 Wireframe Selection

The trackball pointer can select regions of Track time.

1. Click on any empty track area.
2. Hold down the trackball left-button and drag the cursor over the Track Sheet.

A rectangular selection grows from that point.

3. Up or down motion of the dragging cursor adds or removes Tracks from the selection area. Left or right motion adds and subtracts time.

The resulting selection area will be over a contiguous Track and time range.

4. Add discontinuous Tracks to the selection by clicking on the Track names while holding down the keyboard **Ctrl** key.

The selection start and end points will not change when adding new Tracks to the selection.

If you cannot click on empty track area, hold down the keyboard **Alt** key and click directly on a Clip. The wireframe begins on top of the Clip at the time of the cursor location.

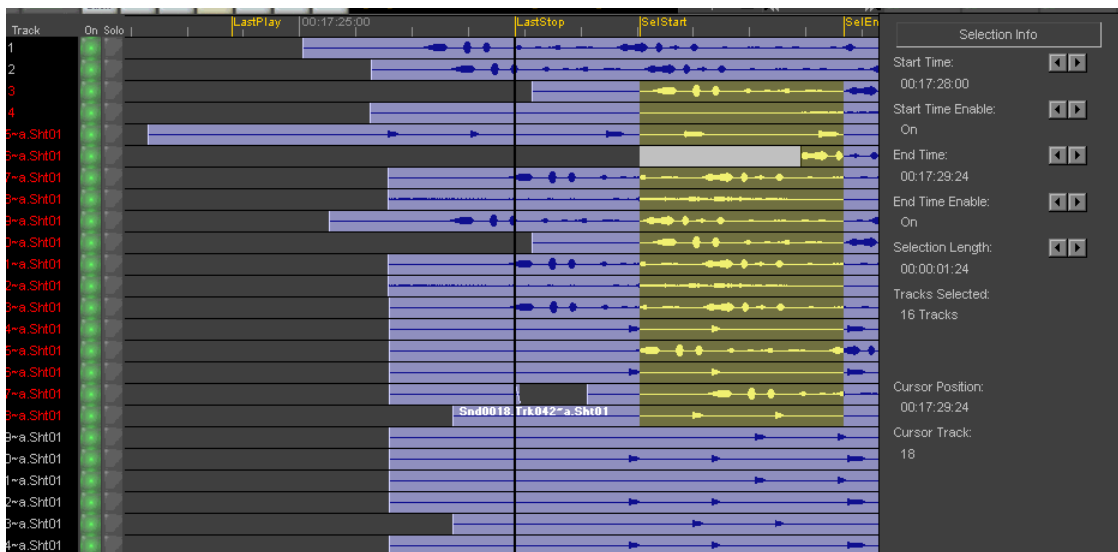


Figure 6-6 Wireframe Selection

6.2.6 Selecting Everything

As documented on page 264 of the main *R-1 Operation Manual*, press **Wave+Select Enable/Select All** on the Remote to Select All Tracks. With version 4, Select All Tracks and Select All Time are also offered in popup menus.



6.2.7 Context-Sensitive Popup Menus

Right-clicking with the trackball pointer produces context-sensitive popup menus in several new places. Right-clicking never does anything harmful or data altering, so you can experiment to explore these new menus (Figure 6-7 and Figure 6-8).

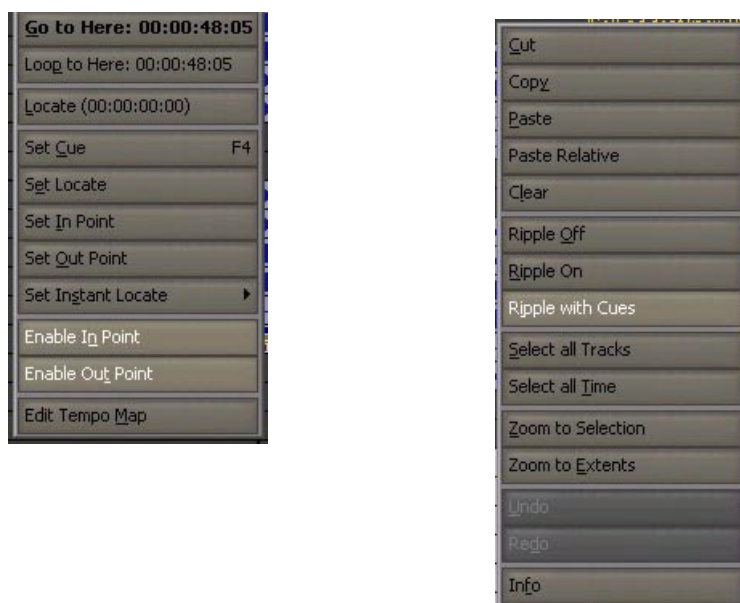


Figure 6-7 Cue Track (left) and Clip Select (right) Right-click Menus

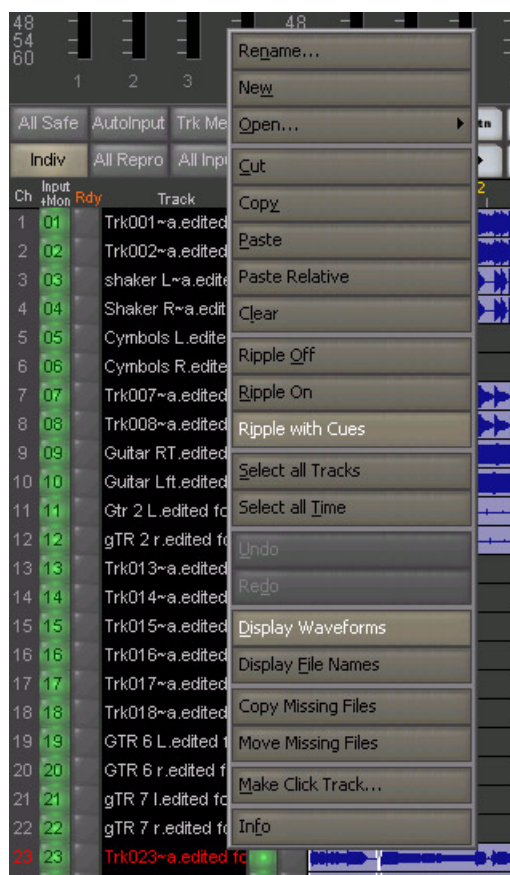


Figure 6-8 Track Name Select Right-click menu

The Meters section also includes a right-click menu for metering options.

6.3 The Info Drop-down Panel

The cursor location in the Multitrack panel determines the information available about the Title. You can even edit the contents of the Title with the **Info** drop-down panel. Click the **Info** button on the far-right/center of the Multitrack panel. Like other buttons in this area, clicking the **Info** button while the panel is open closes it.

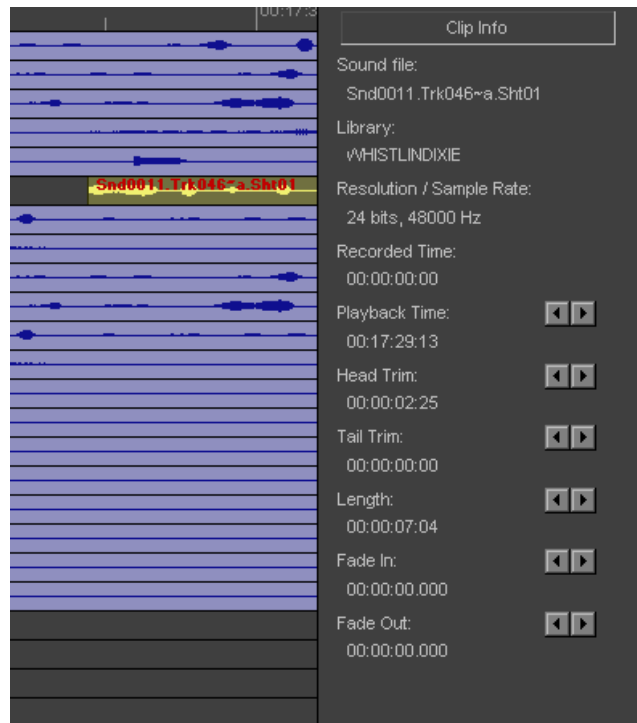


Figure 6-9 Clip Info dialog

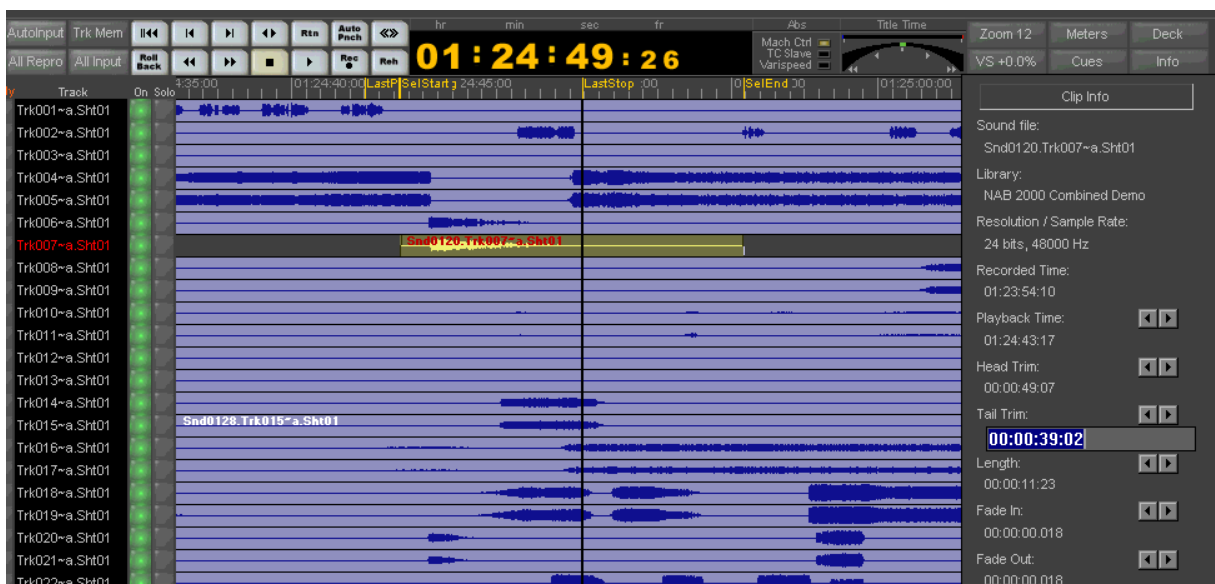


Figure 6-10 Editing the Tail Trim in the Clip Info dialog

6.3.1 Clip Info

All Parameters in the following table are editable except Resolution/Sample Rate.

Table 6-1 Clip Info

Parameter Name	Meaning	Comments/Constraints
Sound File	The name of the recorded Sound File that will be played for this Clip	Editing changes the Sound File name, but not the Sound File referenced
Library	The Library in which the Sound File is stored within the Directory system	Editing moves the Sound File to the entered Library. A new Library is created if the Library name does not exist
Resolution / Sample Rate	The number of bits per sample (bit width) and the number of samples per second when this Sound File was recorded.	System settings at the time of the original recording Bit width = 16 or 24, and files of either type can be used (played) anywhere and together in the same Title or track Sample Rate range 31–100 kHz, but cannot be used interchangeably or together as each Title has a specified SR. When the sample rate exceeds 50 kHz, the R-1 must re-allocate its resources for fewer tracks.
Playback Time (also called Position or Time Position)	The time within the Title of the first playable sample of this Sound File.	Editing the Playback Time changes the time position of every sample within the playable portion of the Sound File. Editing the Playback Time does not affect parameters within the Clip. Editing the Head Trim adds or subtracts samples to the beginning of playable portion of the Sound File, thus altering the Playback Time. This does not change the time position of every sample within the playable portion of the Sound File.
Head trim	Number of samples (in units according to the current time display mode) from the beginning of the original recording until the first sample for playback.	Editing the Head Trim changes the Playback Time. Editing Head Trim does not, however, affect the synchronization of the Sound File on the Track, which can only be changed by editing the Playback Time directly.
Tail Trim	Number of samples (according to the current time display mode) from the end of the original recording until the last desired sample for playback.	Editing the Tail Trim changes the Length

Length	Number of samples of the Sound File to play.	Clip Length = (Sound File Length – Head Trim) – Tail Trim Editing the Length changes the Tail Trim
Fade In	Length from the beginning of the playable portion of the Sound File (Clip edge) to where fade in is completed (first 100% volume sample)	Set by the cross-fade time for Punch In/Out points during record. Once recorded the crossfade time for each clip is unique and editable. Actual crossfades require two Clips be overlapped. If not overlapped, then a fade in or out occurs. When a new Clip is formed by cutting or copying a portion of an existing Clip, the fade parameters of the originating Clip are used in the new Clip (until edited). Fade shapes are linear.
Fade Out	Length from the end of the playable portion of the Sound File (Clip edge) to where fade out starts (last 100% volume sample)	Set by the cross-fade time for Punch In/Out points during record. Once recorded the crossfade time for each clip is unique and editable. Actual crossfades require two Clips be overlapped. If not overlapped, a fade in or out occurs. When a new Clip is formed by cutting or copying a portion of an existing Clip, the fade parameters of the originating Clip are used in the new Clip (until edited). Fade shapes are linear.

6.3.2 Track Info (when one track is selected)

Table 6-2 Track Info

Parameter Name	Meaning	Editable	Comments/Constraints
Track Name	The name of currently selected Track	Editable	Editing changes the Track name
Cursor Position	The current Cursor position with respect to time.	Adjustable elsewhere	Move the pointer to change. Updates continuously to allow for accurate positioning.
Cursor Track	The current Track to which the Cursor is pointing	Adjustable elsewhere	Move the pointer to change. Updates continuously to allow for accurate positioning.

6.3.3 Selection Info (with more than one track selected)

Table 6-3 Selection Info

Parameter Name	Meaning	Editable	Comments and Constraints
Start Time	The time position at which the selection area starts	Yes	This value is retained (and displayed) even when it is not being used (i.e. it is disabled). If Start Time is disabled then the Start Time is automatically set to zero. Use the Store Start (Enable) key to quickly enter this value at the current position, then use this Info Panel to precisely adjust the Start Time in small increments.
Start Time Enable	The on/off (enabled/disabled) status of a selection start time other than Zero.	Switchable	When the Start Time is off the selection area automatically starts at zero. With both Start and End Times disabled the entire Track is selected. Use Wave + (Store) Start Enable key to toggle the Start Time status from enabled to disabled and vice versa.
End Time	The time position at which the selection area ends	Yes	This value is retained (and displayed) even when it is not being used (i.e. it is disabled). If End Time is disabled then the End Time is automatically set to 24:00. Use the Store End (Enable) key to quickly enter this value at the current position, then use this Info Panel to precisely adjust the End Time in small increments.
End Time Enable	The on/off (enabled/disabled) status of a selection end time other than 24:00.	Yes	When the Selection Start Time is off the selection area automatically starts at zero. With both Start and End Times disabled the entire Track is selected. Use Wave + (Store) Start Enable key to toggle the Selection Start Time status from enabled to disabled and vice versa.
Selection Length	The length of time from the Selection Start point to the Selection End point.	Yes	Editing this parameter changes the Selection End Point. If Selection End point is disabled then the Selection End point will be modified, but the actual selection area will not be changed.
Tracks Selected	The number of Tracks with the Selection region.	Adjustable elsewhere	This number primarily for informational purposes and changes according to Track selection operations happening outside of the Selection Info panel.

Chapter 7: Transfer Station

The R-1 Transfer Station archives R-1 recordings in the non-proprietary AES-31 format for later use in any AES-31 compliant recorder, storage on a server, and back up like other types of critical data. The Transfer Station performs the backup archiving tasks of the R-1 so the R-1 can continue to record during a session.

The Transfer Station has many of the same features found in the R-1, such as editing and moving audio clips, but does not play or record audio.

CAUTION: *The Transfer Station software cannot be installed on the same computer that runs the R-1 software. Do not install the Transfer Station software on an R-1 Pilot PC. The Transfer Station software runs only on the Windows 2000 operating system.*

7.1 Using the Transfer Station

The Transfer Station imports and exports AES-31 to and from R-1 Audio Titles. The Transfer station can be utilized as an audio archival station, a backup station, or an audio editor.

7.1.1 Archive Station

The Transfer Station can export audio recorded onto an R-1 to removable media or a network. When placed on removable media, the archive can be placed in a suitable storage area. On a network the files can be managed by the network administrator and shared with other playback devices that read AES-31 titles.

7.1.2 Backup Station

When using the Transfer station for backup tasks, the engineer exports all AES-31 and R-1 titles used for the session from the Transfer Station to the R-1. At the end of each day's session, the engineer performs the same procedure with the **replace existing audio** parameter unchecked. This exports any new audio to their respective folders, replaces the last AES-31 titles with new ones, and also replaces R-1 titles with newer versions. This archive would then be considered the safety backup of the session with the R-1 disks functioning as the masters.

NOTE: *When using the Transfer Station as a backup station, it is imperative that the correct **Export To** folder be selected, other wise the audio may be duplicated more than once.*

7.1.3 Editing Station

When using the Transfer Station as an external editor, the engineer exports the required AES-31 titles from the hard drives. Then the title or file is opened by a third party application and edited visually in the Transfer Station. The edited version is then re-saved as an AES-31 title and imported to the R-1 when needed. In this case, only new or modified files would be imported along with the AES-31 title file.

7.2 R-1 Tape Backup/Restore

The backup and restore features on the Transfer Station work like an R-1 except for the following differences:

- Only one Exabyte drive can be connected.
- When backing up or restoring the entire system, the Transfer Station begins to backup or restore from Deck 1 and moves up to Deck 4.
- The Transfer Station can backup and restore all decks from one tape if the tape is large enough to contain all the data.
- Multiple tapes cannot be used during one backup process. Backup and restore processes cannot be canceled during their operation.

7.3 Changing Drives and Drive Bay Positions

You cannot unload a drive and change hard drives while the Pilot PC is on. To change drives shut down both the application and PC, change the drives, and then restart the computer and application.

The drive positions in the nine-bay Kingston chassis equate to R-1 drive bays as follows:

Deck 1: drives 1 and 2 = Kingston 1 and a

Deck 2: drives 1 and 2 = Kingston 2 and b

Deck 3: drives 1 and 2 = Kingston 3 and c

Deck 4: drives 1 and 2 = Kingston 4 and d

7.4 Features in the R-1 but not in the Transfer Station

Rollback, Jog, Input mapping, All audible features (i.e., Play, record etc.), All Safe, Track Status /input /Repro, Track Memories, Meters, Varispeed, Machine Control, and Slaving.

7.5 Nuendo

Nuendo from Steinberg has been installed on every Transfer Station to audition and edit AES-31 titles. All technical support questions regarding the operation of Nuendo should be directed to Steinberg.

7.6 SCSI Limitations within the Transfer Station

The Transfer Station uses an Adaptec 39160 dual SCSI channel card. Channel A of the SCSI card is used exclusively for the R-1 hard drives and optional tape unit. Connecting R-1 drives to the channel B channel of the SCSI card corrupt the R-1 drives and may render the data unusable. Do not attach additional SCSI devices to the A channel other than those approved by Euphonix. Euphonix approves a maximum of eight Kingston drive bays and a single Exabyte Mammoth single-tape unit on SCSI channel A.

7.6.1 SCSI Speed Limitations on SCSI Channel A

Due to the limitations present in connecting eight drives in a SCSI chain, the SCSI transfer speed is limited to 20 MB/s on the A channel. Attempting to increase the speed is not recommended.

Any SCSI device can be connected to the B channel of the SCSI card as long as you have the proper Microsoft 2000 drivers available.

To gain access to devices connected to SCSI channel B, follow the instructions provided by that device's manufacturer.

7.6.2 Caution When Removing the SCSI Card

If the SCSI card is removed for service or to add additional PCI cards, make sure that before you insert R-1 drives into the unit you set the SCSI card adapter in the Transfer Station Configuration dialog:

1. Right-click on the **Media Browser/Titles Browser** button and select **Configuration** from the pull-down menu.
2. Under the SCSI controller setting, make sure that **ADPU 160** is selected as the SCSI controller.
3. Restart the application.

Never use a third party SCSI controller or software other than what is supplied on the system at the time of purchase. The Transfer Station has been designed to use the ASPI SCSI controller drivers to integrate the R-1 drives into the Windows system. Changing the SCSI card and/or SCSI controller software may corrupt data on your drives and will void your warranty and service warranty contract.

7.7 Transfer Station Drive Bay Configuration

To enable all the drive bays for the Transfer Station, you must select them in the **Configuration** dialog:

1. Right-click on the **Media/Titles** button and select **Configure**.
The **Configure** menu has two sections: Enable PCI Decks and Transfer Station SCSI Controller.
2. Under **Enable PCI Decks**, you can turn on and off drive bays connected to the Transfer Station to mimic any size R-1.
3. For your settings to take place, restart the application.
4. Under the Transfer Station SCSI Controller section you can tell the application what SCSI controller to use. This section is only used during set up and the settings should not be changed. The correct SCSI controller code name should be ADPU160M.

There are two ADPU160M ports in a Transfer Station, so if you need to select the correct one, use the first one found by the system when changing the SCSI controller.

When testing that you have set this up correctly, do not use drives with important data. If you have chosen the wrong SCSI controller you will lose all the data on the drives.

Chapter 8: Miscellaneous Features

8.1 Key Cap Upgrade

Zm In / Expand and **Zm Out / Cntrct** replace the **Zoom In** and **Zoom Out** keys.



Figure 8-1 Zm In and Zm Out keys

Clear Meters replaces the blank key between the **Display Level** and **Shift (Range)** keys.



Figure 8-2 Clear Meters and Select Clip keys

Select Clip replaces the blank key to the left of the **Select Enable / Select All** keys.

Clip replaces blank key between **Track** and **Library** keys.



Figure 8-3 Clip key

Reel Trim / Scroll replaces **Reel Trim** which is next to the **Shuttle** key below the Jog Wheel.



Figure 8-4 Reel Trim key

To remove the old key, use the key cap removal tool or a small flat blade screwdriver to edge into the side of the outer cap and lift it off. Do not pry against the lexan or it will be damaged. Gently lift up while pressing the edge of the screwdriver against the key cap. Be careful because very little force is required.

The center part of the key cap that you removed should be placed inside the new cap. Make sure to get the inner cap fit in the correct orientation so it will fit onto the switch in the remote. The inner cap may sometimes say on the switch. In this case just press the new outer cap into the hole. *Do not force the cap if it is binding.*

8.2 Routing

This section discusses the Route Manager applet for the R-1 version 4 and beyond. Using the Route Manager is a three step process represented by three tabs (across the top of the interface) to expose editing pages.

Open the Route Manager application by:

- Right-clicking on the **Media/Titles/Meters** button in the upper-left corner of the R-1 application.
- Or
- Double-clicking on the **Route Manager** application icon on the Windows desktop.

Three tabs at the top of the router access different functions:

- **Configurations and Patches:** store MADI configurations and routes.
- **Routing:** build or change signal routing to and from each MADI device.
- **Edit Current Configuration:** define hardware types, number of Decks, Converters and Hubs, and which MADI ports are connected in your R1 system.

8.3 Configuration and Patches

Begin by selecting the **Configurations and Patches** tab and make a new configuration in the Configuration window. Several configuration types are available from in the **New** menu. Activate your configuration by double-clicking it or selecting it and pressing the **Open** button. It is active when it has a red check mark next to it. Then use the Patches window to create and name a new patch.

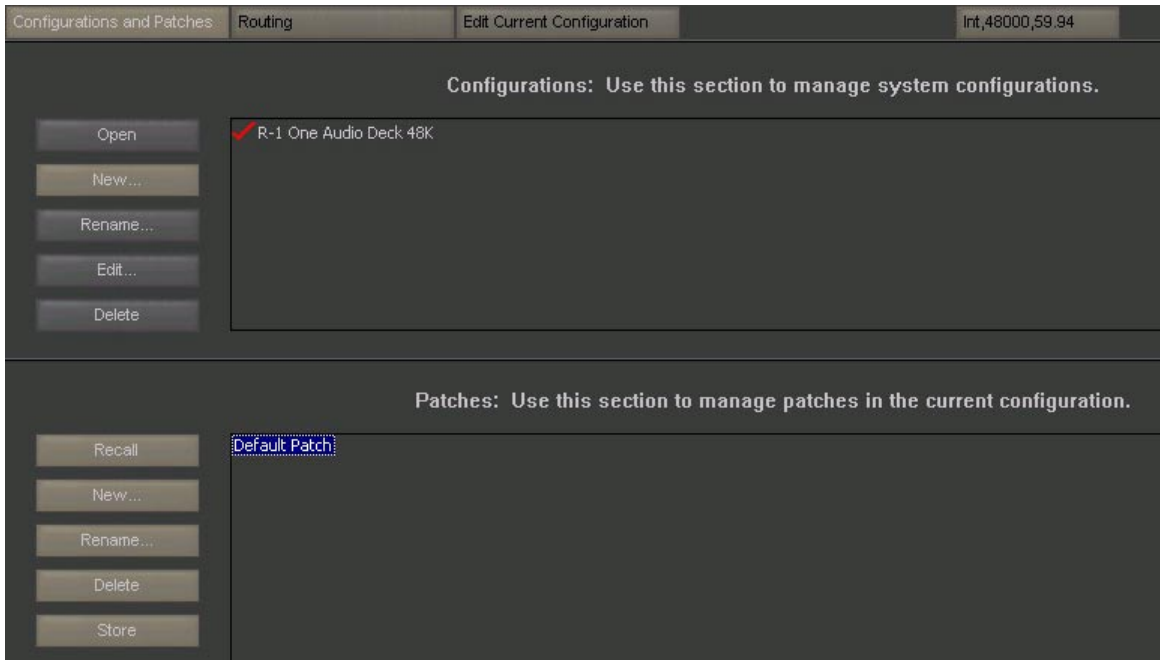


Figure 8-5 Configuration and Patches tab

- **New:** creates a new blank patch.
- **Recall:** activates the selected patch.
- **Store:** stores the patch settings.

Select the **Edit Current Configuration** tab. The following buttons are available:

- Add Device
- Rename Device
- Remove Device
- Declare Connection

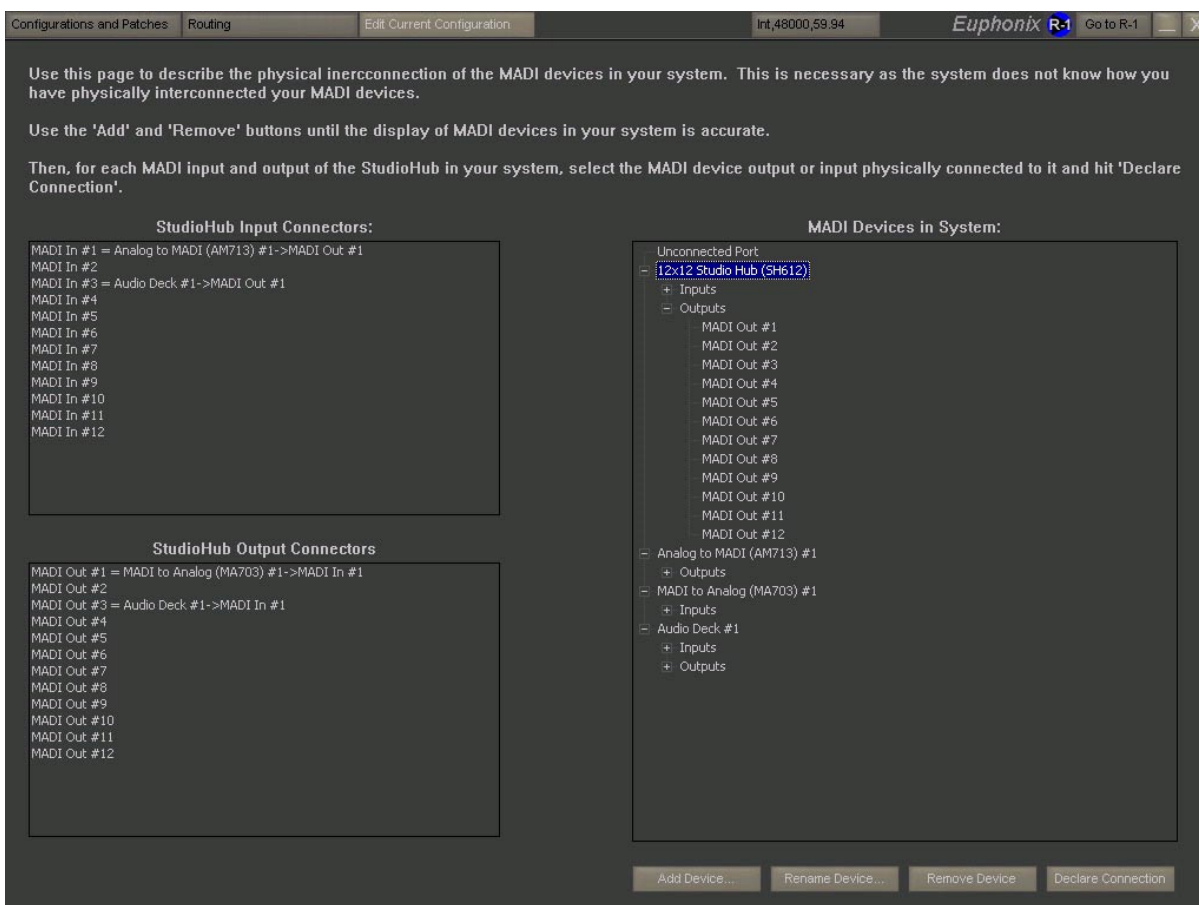


Figure 8-6 Edit Current Configuration tab

Under the heading **MADI Devices in System**, make sure all the system components are listed and that the Studio Hub is the correct size. Remove unwanted components by highlighting them and clicking the **Remove Device** button. Add a component by clicking the **Add Device** button and selecting the device from the list.

Define the MADI port interconnection for each device in your system. This will be exactly how the MADI cables are connected to the R1.

Example:

1. Under **Studio Hub Input Connections**, select **MADI In #1**.
2. Under **MADI Devices in System**, select the **MADI Out #1** of the Analog to MADI Converter (AM 713)#1.

Expand the listed component to see the types of connections available. For example, click the + next to Audio Deck to expand its Inputs and Outputs. Expand the Outputs to see there are two outputs to choose from.

3. Click on the **Declare Connection** button to solidify the connection.

Example:

1. Under **Studio Hub Output Connections**, select **MADI Out #3**.
2. Under **MADI Devices in System**, navigate to and select the **MADI In #1** of the Audio Deck #1.
3. Click the **Declare Connection** button to solidify the connection.

To erase a connection, select **Unconnected Port** in the **MADI Devices in System** window and then click the **Declare Connection** button.

8.4 Creating Custom Routes

The **Routing** tab has Signal Sources and Signal Destinations areas.

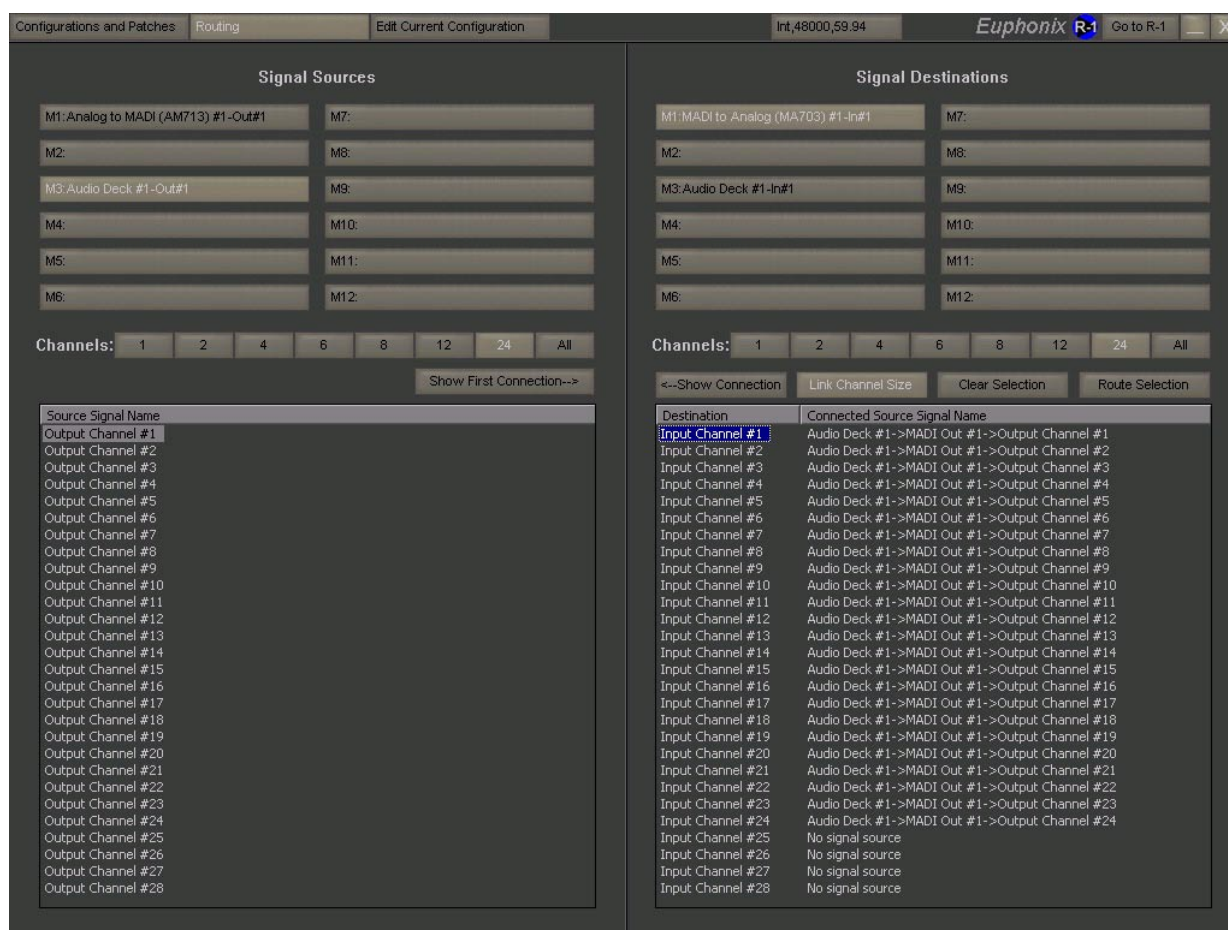


Figure 8-7 Routing tab

To create a route:

1. Select the Signal Source device to Route from.
The device's outputs are displayed in the window below.
2. Select the Signal Destination device to route to.
The device's inputs are displayed in the window below.
3. Select the output channel from the Signal Source and the input channel from the Signal Destination.
4. Click the **Route Selection** button to make the connection.

Save this new route as a new Patch as described below.

- You can route banks of 2, 4, 6, 8, 12, 24 or all channels by using the channel width buttons. You can also link the channel size selection with the **Link Channel Size** button.
- To clear a route, select the input channel to reset and click the **Clear Selection** button.
- All changes to a route are immediate and there is no undo function.

8.5 Saving Patches

Once your MADI connections have been defined, you must save your settings.

1. Select the **Configurations and Patches** tab.
2. Select your Patch.
3. Press the **Store** button.

To recall a Patch for viewing, editing, or activation in the Studio Hub, select the desired Patch and click the **Recall** button.